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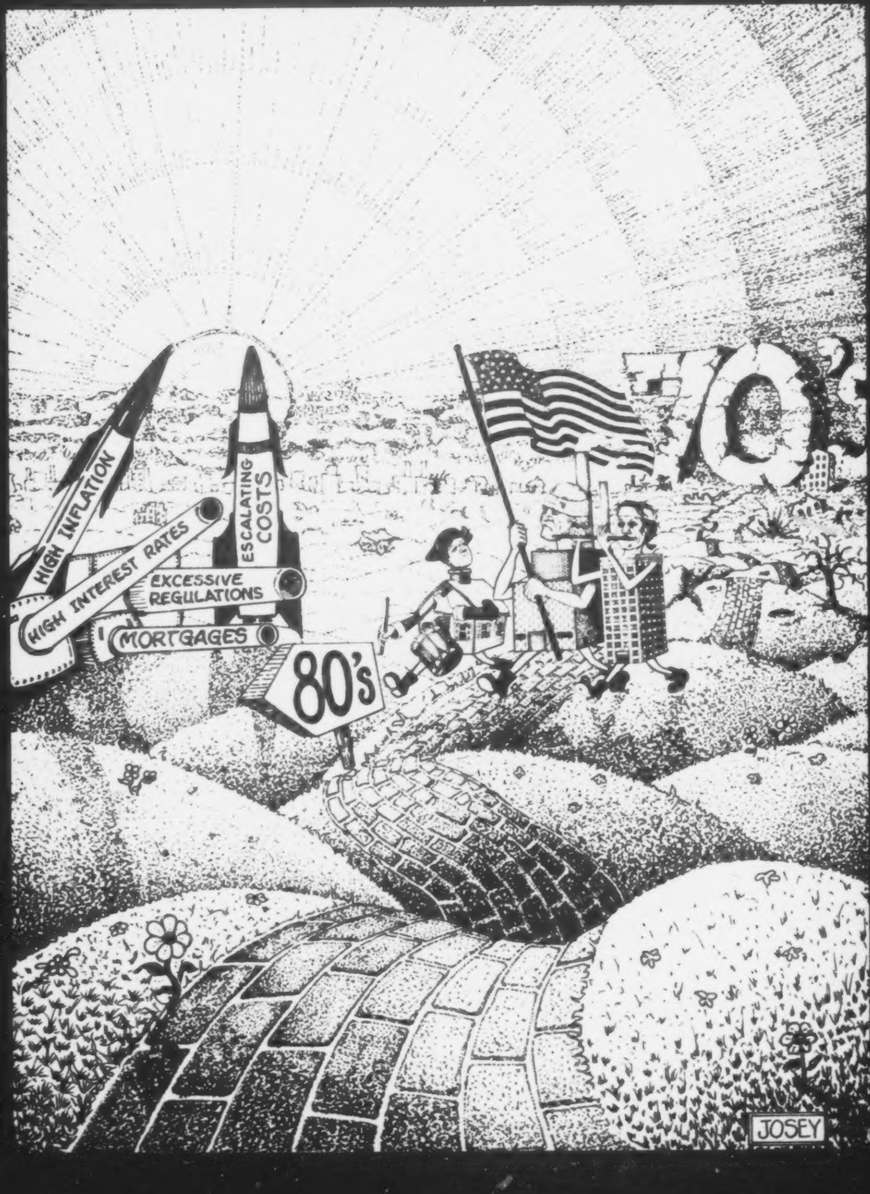
business and economic review

DIVISION OF RESEARCH ■ COLLEGE OF BUSINESS ADMINISTRATION ■ THE UNIVERSITY OF SOUTH CAROLINA

The Real Estate Future


HIGH INFLATION
HIGH INTEREST RATES
ESCALATING COSTS
EXCESSIVE REGULATIONS
MORTGAGES
80's
70's
JOSEY

Volume XXVIII, Number 2
November 1981

"The Real Estate Industry in South Carolina: A Blueprint for the 1980's" by Arthur E. Warner

"Demand for Housing in the 1980's" by Phyllis Woodham Smith

"The Mortgage Market in the 1980's" by Arthur E. Warner and F. Jerry Ingram

"Commercial Real Estate Activity in the 1980's" by James P. Gaines

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10 **The Mortgage Market in the 1980's.** Real estate activity is heavily dependent upon the availability of affordable financing. Dr. Arthur E. Warner and Dr. F. Jerry Ingram explain the workings of the institutional mortgage market and "the overall financial system," and make some predictions for this decade.

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This month's cover: As Dr. Arthur E. Warner, Chairholder in Real Estate at USC, observes in his article on p. 3, this issue, "no one can live without [real estate]." Yet, the real estate industry has had some rough sledding in recent years, and it looks like there's more to come. (Cartoon by Eddie Josey of USC's Instructional Services Center.)

The Real Estate Industry in South Carolina: A Blueprint for the 1980's

By Arthur E. Warner

INTRODUCTION

All people use real estate in a variety of forms on a daily basis. In fact, no one can live without it. Real estate resources provide for housing, shopping, recreation, employment, education, health care — in short, nearly all activities carried on by everybody.

Real estate is one of the most vital components of the economy. It is estimated, for example, that land and buildings constitute roughly two-thirds of the national wealth; the remainder consists primarily of equipment and inventories. It has been noted by one astute observer that "all Americans 'know' real estate; at least we think we do."* In recognition of these facts, together with the explosive changes that have occurred in real estate and financial markets during recent years, this issue of the **Business and Economic Review** presents a series of articles on real estate issues and topics that are of significance to everybody who lives in, or might be interested in living in or investing in real estate in, South Carolina.

While nationwide events and developments, including changes in employment, gross national product, interest rates, and inflationary pressures, have a profound impact on real estate activities in South Carolina and other states, real estate markets are essentially local in nature. Patterns of land use, prices availability of land, and real estate improvements differ greatly between geographic regions and states. For example, the real estate markets in California or Texas possess different characteristics and behavior than those in South Carolina.

Dr. Arthur E. Warner is Holder of the Chair in Real Estate, Property Finance, and Urban Development, and Director of the Center for Real Estate and Urban Economic Studies in the College of Business Administration, The University of South Carolina. Dr. Warner holds B.S., M.B.A., and D.B.A. Degrees from Indiana University and is a past Dean of the Colleges of Business Administration at The University of Tennessee and The American University. He has served as a member of, or consultant to, numerous national business, governmental, and public service organizations, and is the author of a number of books, monographs, and articles.

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The following articles address issues, problems, and prospects for the real estate industry in South Carolina during the 1980's. Although the first years of the decade have not been especially auspicious for some segments of the industry, others have experienced excellent beginnings and, as several of the ensuing articles point out, prospects for the real estate community throughout the life span of the 1980's are quite promising.

The first article focuses attention on the overall demand for housing in the United States as viewed from the perspective of what occurred during the 1970's modified by demographic and life style changes that will influence housing decisions in the future. Following the discussion of demand for housing, prospects for obtaining funds to invest in real estate are analyzed, the structure of the mortgage market is portrayed, and the flows of funds through financial markets are traced. Subsequent articles discuss factors that will influence commercial and industrial real estate activity in South Carolina during the 1980's and even beyond.

The issue concludes with two articles that take a look at the future and forecast what lies ahead for the real estate industry in South Carolina. One utilizes the South Carolina Econometric Model to estimate real estate construction and sales; the other draws upon the experience of a real estate executive to make a "crystal ball" forecast for the 1980's.

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*Henry E. Hoagland, **Real Estate Principles,** New York, McGraw-Hill Book Company, 1955, p. 1.

Demand for Housing in the 1980's

By Phyllis Woodham Smith

INTRODUCTION

The marketplace is a constantly changing picture as dynamic forces affect supply and demand. This description will be especially true for the housing market in the 1980's. Demographic trends and changing life style patterns building over the past decade have created an almost steamroller demand for housing. Inflation has only added fuel to that demand, given past and present public policy. Housing supply, as well as demand, is also constantly seeking new routes to circumvent the effects of inflation.

These actions of consumers and of housing suppliers have led to some housing types being preferred over others. Critical shortages exist in housing rentals and housing for low income people in general. This decade should prove to be a time of reconsidering the overwhelming commitment to home ownership relative to other national goals. Housing may indeed lose position in the national ordering of priorities.

DEMOGRAPHY AND CHANGING LIFE STYLES

Understanding the demand for housing over the past decade and accurately projecting demand for the present decade are not easy tasks. An appropriate beginning is certainly an analysis of demography. Absolute demographic statistics, however, must be tempered by an examination of changing trends in American life styles, as well as other concomitant market forces.

Mrs. Phyllis Woodham Smith is a Ph.D. candidate in Real Estate in the College of Business Administration at The University of South Carolina. She also holds a B.S. Degree in Business Administration from USC. Mrs. Smith has worked in mortgage banking and published in **The South Carolina Realtor Magazine** and the **Records Quarterly.** She also contributed several chapters to the First Edition 1980 **South Carolina Real Estate Manual.**

Analysis of these two major factors — demography and changing trends in life styles — indicates a strong demand for housing this decade. Demand with purchasing power, i.e., effective demand, however, will be a lesser amount because of the effect of other market forces, such as product availability and the cost of financing.

The evidence for support of strong demand projections based on selected demographic statistics are shown in Tables 1-3. For example, Table 1 presents an interesting picture of how the United States population will grow by various age groups over the next decade. While the 15-24 age group will decrease, the 25-34 age group is projected to increase, from 36.0 million to 41.1 million, or 14.2 percent. The 35-64 group, traditionally a major source of demand for single family detached dwellings, is projected to increase, from 69.5 million to 81.0 million, or 16.5 percent. This group's increasing size obviously will place mounting demand pressure on all forms of housing.

Now consider the 65+ age group which will rise from 25.0 million to 29.5 million, or 18.0 percent. This increase does not even reflect the postwar baby boom which will affect this age group even more dramatically in future decades.

In addition to analysis of the population by age group, another informative measure is household formation. Analysis of this measure leads to consideration of changing life styles because of its changing numerical trend. Initially, however, consider the numerical changes in households as indicated in Table 2. National figures show households increasing at a faster rate over the decade than any of the age groups considered or even any combination of age groups. South Carolina's household increase is even greater.

What is causing this divergence of household growth pattern and natural population increase? A partial answer lies in Table 3. Further analysis of household formations shows that in a breakdown into family and nonfamily households, the latter will increase this decade at a faster rate, 26.5 percent compared to 16.4 percent. Over the last

TABLE 1. Population by Age Groups (in millions, rounded)

Age Group	Year 1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
15-24 Years	41.2	40.8	40.2	39.5	38.8	38.2	37.7	36.9	36.0	35.1
25-34	36.0	37.3	37.7	38.4	39.0	39.7	40.3	40.7	40.9	41.1
35-64	69.5	70.2	71.8	73.1	74.4	75.5	76.8	78.1	79.5	81.0
65+	25.0	25.5	25.9	26.3	26.8	27.4	27.9	28.5	29.0	29.5

Source: Professor Dwight Jaffee, Princeton University; Professor Kenneth Rosen, University of California at Berkeley; Michael Sumichrast and Robert Sheehan of the National Association of Home Builders' Economic Department.

decade, the difference in growth rates was even more dramatic, i.e., 63.3 percent for nonfamily households and 15.1 percent for family households. Even though nonfamily households are much smaller in absolute numbers, they accounted for 49.4 percent of the growth in total household formation over the last decade.

The cause of this growth in household formation of singles or nonrelated individuals living together is explainable — changing life styles. Consider the following list of familiar life style changes that have taken place during this past decade and contemplate their effects on household formation:

- people choosing to postpone marriage for a few years;
- people choosing to live alone until marriage;
- couples choosing to wait longer to have children, to have fewer children, or not to have children at all;
- an increasing divorce rate among first and later marriages;
- women choosing to set up housekeeping before marriage or after divorce as opposed to traditionally staying with, or returning to live with, relatives;
- more people choosing to live with unrelated individuals of the same or opposite sex.

Other life style changes that affect housing decisions with regard to form, size, location, and cost include the following:

- increased consumer awareness of energy costs,
- increased leisure time,
- consumer belief in real estate as a hedge against inflation,
- increased participation by women in the labor force,
- increased incomes and expectations,
- increased number of white collar jobs,
- increased percentage of income allocated to housing expense.

TABLE 2. Household Projections (in thousands, rounded)

Households	1980	1984	1989	Percentage Change 1980-'89
United States	79,431.0	86,749.0	94,592.0	19.1%
South Carolina	978.5	1,084.2	1,224.0	25.1

Source: National statistics' source: same as Table 1, this article; for South Carolina statistics: Sales and Marketing Management Forecasts.

The majority of these trends indicate that the smaller, well-located, high amenity housing units should be the form most strongly demanded. Increased incomes and expectations, the belief in home ownership as a hedge against inflation, and the willingness to spend a larger percentage of income on housing, however, conflict with the "small is better" attitude. The change in the product form as a response to the rising expectations of the public is discussed in a subsequent section. In this section, the analysis of increasingly strong demand for housing units over the 1980's leads to a two-fold explanation: first, the postwar baby boom is now of age to demand housing units, and second, the changing life style patterns of Americans magnifies this population increase by causing fewer persons per household.

HOUSING STARTS AND SUPPLY

In an age of rising costs and scarcity of various resources, the question is raised by various consumer groups and some politicians as to whether or not the home building industry has the

TABLE 3. Projected Household Trends (in millions, rounded)

United States Households	1970	1980*	1990*	1970-'80 Percentage Change	1980-'90 Percentage Change
Total	63.5%	78.9%	93.8%	24.3%	18.9%
Family	51.5	59.3	69.0	15.1	16.4
Nonfamily	12.0	19.6	24.8	63.3	26.5
Percentage Nonfamily	18.9	24.8	26.4	49.4	34.9

Source: U.S. Bureau of the Census: Housing and Population Census 1970 and Current Population Reports.

*Estimates represent the likely Bureau of the Census Projection (Series II).

ability to meet the growing demand in this decade. Home building industry leaders are very positive in their forecasts. The pulse of the housing industry is housing starts. Table 4 presents an historical perspective of total housing starts and the percentage change from one decade to the next.

The 1950-'60 decade witnessed a phenomenal 105 percent increase over the previous decade, a building response to pent-up demand from the war years. The 1960-'70 decade maintained the building trend with only a 4.1 percent loss. The 1970-'80 decade had a 25.4 percent increase. This increase was partially due to extensive governmental housing programs. The 1980-'90 projection, an increase of 9.5 percent, is by no means an unreasonable forecast in light of the ability to produce in the previous decades and the anticipated demand for the 1980's. Even if the forecast for housing starts is off, available housing stock surplus can cover an increase in households of 3.8 to 12.2 million. Depending upon the source of information, 83.2 million to 85.8 million housing units were available in 1980, and the level of households at the beginning of the decade ranged from 73.6 million to 79.4 million. Considering a level of 83.2 units of supply less 79.4 units of demand, a surplus of 3.8 million supply units exists in the extreme case. This could represent a 19.7 percent reduction in the projected 19.3 million housing starts. In an optimistic light, 85.8 units of supply less 73.6 units of demand yields a 12.2 million surplus of supply units, or 63.2 percent of the 19.3 million housing starts projected.

TABLE 4. Total Housing Starts by Decade, 1950-'90

Decade	Total Housing Starts	Percentage Change
1940-'50	7,153,000	
1950-'60	14,666,000	+105.0%
1960-'70	14,065,000	- 4.1
1970-'80	17,631,000	+ 25.4
1980-'90	19,300,000	+ 9.5

Source: Same as Table 3, this article.

Table 5 and 6 show annual housing starts by housing type. Table 5 presents actual data for a basis of comparison for Table 6 which gives the forecast for the decade. At the time this forecast was estimated, the Federal Reserve had not changed its policy of managing interest rates to that of managing money supply. Therefore, the ensuing wild swings in interest rates were not anticipated, and the forecasts for this year are off approximately 10 percent for single family starts and 25.6 percent for multifamily starts. Overall, the housing starts projections are off by approximately 15.7 percent, based on housing start experience to date. However, as the market adjusts to the new policy and stabilizes, the forecasts should prove to be more in line with actual starts for at least the single family units. The multifamily sector is in for difficult times, as will be discussed shortly, and the projections for this sector may not be met.

TABLE 5. Annual Housing Starts, 1977-'79

Year	Housing Type		
	Single Family	Multifamily	Total
1977	1,450,900	536,200	1,987,100
1978	1,433,300	587,000	2,020,300
1979	1,193,200	550,400	1,743,600

Source: Department of HUD, 1980 National Housing Production Report.

The outlook for supply is that sufficient housing units should be available to meet the demand of the 1980's, but the housing types may not be of the desired form in a particular area. Housing normally is considered a local market phenomenon as opposed to other land use types. This corollary is formulated, of course, with the understanding that housing anywhere can be, and is, affected by international,

national, and regional events and forces. A clear-cut example of such a force is the regional population migration to the sunbelt that escalated in the past decade and is expected to continue into the next decade, even if at a slower rate. The following sections develop the outlook for the different housing types and a rationale for the economic preference of one over others.

HOUSING TYPES — THE OUTLOOK FOR THE 1980's

The beginning of the decade is proving to be slow for housing starts. However, there are expected to be two peaks during this 10-year period, one in 1984 and the other in 1989.

TABLE 6. Forecasted Annual Housing Starts, 1980-'89

Year	Housing Type		
	Single Family	Multifamily	Total
1980	869,400	396,800	1,266,200
1981	982,000	610,700	1,592,700
1982	1,148,900	539,000	1,687,900
1983	1,636,700	618,700	2,255,300
1984	1,826,600	640,300	2,466,900
1985	1,714,660	323,370	2,038,030
1986	1,461,480	227,060	1,688,540
1987	1,514,080	260,720	1,774,800
1988	1,760,480	443,260	2,203,740
1989	1,910,690	511,720	2,422,400

Source: Same as Table 1, this article.

SINGLE FAMILY HOUSING

During the 1980's, the single family dwelling will continue to experience popularity as increasing numbers of consumers seek to jump on the home ownership bandwagon as a hedge against inflation as well as for the more traditional reasons for wanting a house. Many factors increase the attractiveness of home ownership. One of the leading ones is the tax benefits accruing to homeowners. These well-known benefits include the right to deduct real estate property taxes and mortgage interest paid from taxable income; the right to sell a house without paying capital gains taxes on the proceeds as long as another home is purchased in a given time frame; and finally, the right to receive $100,000 in capital gains after age 55 without paying any tax whatsoever. Another supporting factor is the belief that home ownership is a hedge against inflation which is reinforced by the continuing expectations of high inflation rates. The new forms of mortgage instruments and the additional sources of real estate financing should also increase home ownership availability. Add to this growing list the traditional noneconomic reasons for home buying, and a solid case for home ownership emerges.

People need shelter. Owning one's own home carries a certain amount of prestige, independence and stability. Home ownership has long been encouraged by public policy because of the beliefs that owners care more for their properties, usually are more involved in community affairs, and have political interests in our free enterprise system. In other words, homeowners have a significant financial stake in the American way of life.

The home ownerships rate is expected to rise to 68 percent of the population by 1990. This rate is up from 65.7 percent in 1980. A subsequent section covers the discussion of home prices and inflation.

Multifamily and Single Family Rentals

The outlook for multifamily housing is dismal. A national vacancy rate of less than 5 percent and steadily rising rents have failed to attract development of new rental construction. Some areas are already in a crisis stage, and observers believe the severe shortage is spreading rapidly. Developers offer several reasons for avoiding this market. Rents are rising but not at the same rate as expenses. The interest rates charged multifamily developers are so high, it is not possible for them to make a sufficient profit. Additionally, the public policy on rent control and the courts' move toward increasing tenants' rights scare away developers.

Other major factors affecting multifamily housing are the attraction of home ownership for consumers and the attraction of conversion of multifamily rentals to condominiums for developers. As renting becomes more expensive, the difference between rental expense and the cost of home ownership diminishes. For consumers who can afford to do so, this situation leaves few options but to buy once the tax benefits and inflation rewards of home ownership are considered. This move is especially true of the renters of the higher priced apartments. The loss of the higher rents exacerbates the problem of the cost-profit squeeze since the higher priced units yield the most profit. The above scenario shows why developers are encouraged to convert or demolish rental units as opposed to constructing them.

Over the past decade, 366,000 rental apartment units have been converted into condominiums and cooperatives. The conversion to cooperatives accounted for 18,000 units of the total. The majority of this activity occurred between 1977 and 1979. In addition, the federal government projects that from 1980 to 1985, another 1.1 million units will be converted.

The rental market for single family units is also losing ground to home ownership demand. In 1960, the single family homes accounted for nearly half of all rental units. By 1980, the proportion had declined to one-third and future decline is anticipated. The multifamily rental sector is in no position to take up the slack.

The status of the rental market has already yielded significant changes in demographic trends. On average, renters move from one unit to another in less than three years and about 40 percent move in one year. Consumers are already moving less frequently. For the consumers who must move from one city to another or for those just starting out, the shortage is imposing a tremendous hardship. As rents increase and the shortage becomes more acute, the question of the fairness of the tax benefits for one type of housing over another will need to be answered.

Condominiums

In the midst of a gloomy forecast for the traditional rental market shines the outlook for condominiums. The federal government forecasts that by the year 2000, nearly one-half of the nation will be housed in condominiums. This form of ownership is a positive development because it provides solutions for the problems of several groups of people. Generally speaking, consumers can enter the condominium market with less income than required in the single family market. Regardless of income, however, condominiums are also an escape for those who have neither the time nor the inclination for yard and exterior maintenance. Further, this form of housing provides a means of participation in the tax benefits of home ownership for those who do prefer multifamily dwelling. Finally, condominiums are serving as a significant rental source. About 10 to 20 percent of the condominium units are currently being rented.

Even though the condominium market has expanded dramatically in the last half decade, it does have its problems. For instance, in addition to the financing dilemma (one common to all housing types), there is the fact that condo conversion is slowing in many cities because most of the prime properties have already been converted. Also, in some cities, there is significant community opposition to conversions, because these groups believe the poor and elderly are being displaced and/or that the market of rental units is being seriously depleted. However, as mentioned earlier, the conversions usually take the prime rental properties.

From a governmental point of view, condominium conversions are a plus. Experience indicates that property taxes are likely to increase as a result of the conversions, whereas the impact on municipal services will be relatively modest.

Over the next decade, condominium production is projected to add 175,000 to 200,000 units annually. Of these, 35 to 40 percent will be conversions. This outlook does not even include the popularity of condominiums in the resort and second home market. Currently, 20 to 25 percent of all condo units can be classified as second homes.

Mobile Homes

Mobile homes have changed dramatically over the last decade. The industry trade association — the Manufactured Housing Institute — asks that the product be referred to as "manufactured housing" since it is no longer built on wheels. Manufactured housing has also increased in value and acceptance. Whereas they used to depreciate from date of purchase, some manufactured housing is actually appreciating. More double-wides are being used than previously, increasing average unit value. Some government officials are pushing manufactured housing as the only way a free enterprise system can satisfy the housing needs of low and moderate income families. This suggestion may indeed prove to be a viable alternative. Before this can happen, though, many local governments must change regulations that either actually prohibit manufactured housing outright or subtly exclude them from consideration. Over the next decade, shipments of manufactured housing are anticipated to reach 3,282,000 units.

Low Income Housing

Low income housing has a bleak immediate future as long as the Reagan Administration is able to steer policy on housing subsidies. In the rental sector, the administration proposes a significant reduction in the number of subsidized rental units to be built. In many cities, these programs would have been the only source of new rental housing. The subsidized home ownership programs face the same fate, that is, if some are not eliminated outright.

The Reagan Administration's belief in states' rights also extends to housing. More emphasis is placed on block grants and the equivalent, giving state and local housing authorities the control over how low income families are to be housed.

On the federal level, experiments with a housing credit assistance program and/or a type of cash subsidy program have taken place in various test cities. Proposals for a national trial of such programs are being made, but these, too, may be modified or eliminated by the Reagan Administration. At present, the direction low income housing support will take is somewhat up in the air.

RISING REAL ESTATE PRICES AND INFLATION

Countless articles have been written on the rising costs of housing, yet few of these efforts have made a distinction between the product of today and the product of the base year. For example, the average size house following World War II was approximately 800 square feet. That figure has more than doubled since then. As a result, a trend line of average prices over the years would definitely show dramatic increases. A more common approach, then, is to study the trend of price per square foot. This measure, however, can also be deceptive. Admittedly, the costs of materials, labor, and land have been rising in our inflationary economy. On the other hand, our expectations and standard of living have also been rising. The house of yesteryear did not have calculated into its cost per square foot the amenities demanded today. "Extras" not then packaged into the total price cover such items as central air, carpeting, built-in appliances (garbage disposals, stoves, dishwashers, smoke detectors, and trash compactors), and even two-door garages. Certainly, the argument can be made that such requirements are necessary to maintain a chosen standard of living. This reasoning is valid. The point, however, is that the increasing costs of housing include not only the inflationary costs of acquiring the shelter product but also the costs of the chosen standard of living society is dictating. As Americans choose priorities in the next few decades, housing is likely to suffer a decline, as discussed in the following section of this article. The housing product will eventually become smaller, less amenity rich, and more energy efficient. Therefore, if housing prices decline or stabilize relative to other prices, it will be primarily a function of a decreasing standard of living.

The forecast for housing for this decade is still a picture of rising prices and increasing square feet, showing that consumers are not yet ready to sacrifice their standard of living. The median price of a new home is projected to increase from $66,138 in 1980 to $156,537 in 1989, a 137 percent increase. Average size is expected to rise to 1,900 square feet, meaning the average cost per square foot is likely to approach $82. Existing home prices are expected to increase from a median of $58,840 in 1980, to $136,307 in 1989, or 132 percent. During the 1980's, the average annual rate of increase for new home prices is expected to be 9.5 percent. The Consumer Price Index is expected on the average to rise 7.6 percent per year. Overall, housing prices are expected to rise faster than inflation.

Such predictions would indicate that the rush to obtain a home as a hedge against inflation is valid behavior. Unfortunately, consumers may find that owning a home is not as good a hedge now as it once was. The loss in advantage stems from rising mortgage rates and changing mortgage terms. As more variable rate mortgages are utilized, the risk of inflation is shifted increasingly toward the borrower and away from the lender and saver. (The conditions of the mortgage market are fully explained in "The Mortgage Market in the 1980's," this issue.)

When low down-payments are used, leverage is the key to profit because inflation allows any significant increase in the housing asset to provide a huge return on equity. The fixed-rate mortgage coupled with inflation causes a reduction in the carrying cost (debt service payments) over time. Therefore whether inflation is friend or foe of the housing consumer really depends upon when the consumer gets into or out of the market and the financing terms he can arrange.

Another effect of inflation is the fact that it pushes people into higher tax brackets which makes the value of the tax benefits of home ownership even greater. This situation causes "the bigger the better" syndrome as consumers seek larger tax shelters, and an artificial element of demand is introduced as people consume more space than they need or, in some cases, even want.

Repeated warnings that sales prices of homes are beyond the ability of the majority of consumers have failed to prove true. Only an actual shortage of funds has dampened sales. Inflation psychology and the willingness to spend an increasing proportion of income have kept the housing market higher than anticipated. As one analyst points out, a consumer can afford to pay a larger proportion of his income on housing than traditionally expected because he is now combining his housing expense and his budgeted outlay for investment.

The overall outlook for housing in the immediate future is a continued strong demand for large houses as long as the expectations of inflation are high. As other demographic trends take hold and as inflationary expectations are downgraded and more attention is drawn to the necessity of other priorities — especially as dictated in the market place — houses should decrease in size and median price. The cost of financing should remain high relative to historical experience because of the mad scramble for capital funds the various sectors must seek. This competition for funds, among other factors, will help keep interest rates high.

AMERICA'S CHANGING PRIORITIES

Over the last couple of years, public attention has been drawn to the slowdown, and now the decline, in productivity. American plants and equipment are in desperate need of renewal. Yet more capital flows into home mortgages than into any other source — business investment, or state or local government finance. The question has arisen as to whether or not **too** much capital is flowing into the housing market. Have the American people upgraded their standard of living through home ownership of large, high-amenity, capital-intensive houses at the expense of their livelihoods? Instead of financing inventories, equipment, plant renewals, or plant expansions, an increasing proportion of capital has moved into financing homes. The increase is due to the facts that the homes are more costly, the loan to value ratio has risen, and more people are participating.

Another aspect of home finance that contributes to the concern of overinvestment in housing is the leakage of funds occurring whenever existing homes are turned over. In 1979, on average, repurchasers received $30,877 equity from their original homes, but only invested 34 percent of that amount in their next home. Much of the remainder is suspected to have gone for current consumption. Such action is perfectly logical from the viewpoint of the individual, but in aggregate this flow of funds may be detrimental to society as a whole.

To place this mismatch of funds and needs in the proper perspective, the base for this activity cannot justifiably be placed on our free enterprise system. The participants in the marketplace have acted logically considering the rules they have been given. The real root of the problem is perhaps a need to change the rules. Public policy has long supported housing, and it has obviously been at the expense of other sectors. Not only does home ownership have the advantage over renting in the housing sector, from a tax viewpoint; it also has advantages over small businesses, stocks, and other investments within reach of the average consumer who has neither the capital nor the expertise to open a small business or to participate in other investment opportunities.

Signs exist that indicate a move has already been made to equalize the various sectors. Through the Depository Institutions Deregulation and Monetary Control Act of 1980, financial institutions are becoming more competitive with each other and have been given the ability to compete more effectively with other sectors in the economy. After a period of adjustment, lenders and savers will no longer subsidize housing and the huge profits that borrowers have received over the past decade. The 1980's will definitely be a period of adjustment for housing.

The Mortgage Market in the 1980's

By Arthur E. Warner[1] and F. Jerry Ingram

INTRODUCTION

As current market conditions make abundantly clear, real estate activity is heavily dependent upon the availability of affordable financing. Record, or near record, high mortgage interest rates have practically throttled housing construction and sales around the country. South Carolina has not escaped this devastating crunch. Nonresidential real estate activity, while somewhat less sensitive to interest rates, has also been retarded by the mortgage market situation. There can be little doubt that effective real estate decision making in the 1980's will require a thorough understanding of the dynamics of the mortgage market.

In order to understand and anticipate real estate activity during this decade, the consumer must, first, thoroughly appreciate the evolution of the institutional mortgage market and the overall financial system. Only with such a background can he properly evaluate real estate market conditions.

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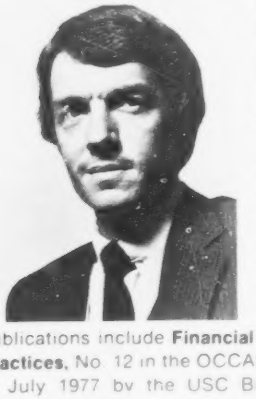
[1] For biographical sketch of Dr. Warner, see "The Real Estate Industry in South Carolina: A Blueprint for the 1980's," this issue.

It is important for the reader to note that, contrary to tradition, this article will discuss **the** mortgage market as opposed to a set of local mortgage markets. Although local supply and demand factors still cause some variance in mortgage rates and terms among regions, the trend is definitely toward a unified national mortgage market. The existing secondary mortgage market arrangements are already doing a remarkable job of mobilizing money capital from surplus to deficit areas, and it will make even more sense to talk about **the** mortgage market as we advance into the 1980's. Such developments are highly beneficial to South Carolina real estate markets because this state has been, and will likely continue to be, a net importer of mortgage capital.

THE ENVIRONMENT AND STRUCTURE OF THE MORTGAGE MARKET IN THE 1980's

Real estate financial decisions are made in a financial environment that includes individuals, firms, institutions, and agencies competing for the pool of funds available for investment at any given time. The financial system is composed of those individuals, dealers, institutions, and agencies that carry out the functions of allocating the monetary resources required to conduct the day-to-day activities of the economy. The system performs two essential functions through the financial markets. On the one hand, it provides the channels through which funds can flow from suppliers to users. At the same time, it establishes the prices to be paid for funds. It is the interactions among the financial markets that direct the investment of funds into real estate securities (primarily mortgages), stocks, bonds, demand and time deposits, and other types of financial instruments.



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The flow of funds function allows for consumption and investment in the economy, provides for the accumulation of wealth through savings and earnings (profits) of business firms, and distributes funds among the various sectors of society. The pricing mechanism assesses the risks associated with different types and maturities of securities and establishes the expected rates of return they must offer if they are to be successful in attracting investors. This pricing process plays a dominant role in the allocation of capital to the most productive forms of investment.

The financial system includes brokers and dealers who facilitate financial transactions by expediting transfers of funds from savers directly to users and financial intermediaries. These individuals and institutions, in turn, facilitate the transfer of funds more indirectly through the credit process. The major financial intermediaries in the United States are commercial banks, mutual savings banks, savings and loan associations, credit unions, life insurance companies, investment companies, money market funds, and finance companies. These institutions collect funds from the public in the forms of deposits, savings accounts, and other certificates, share accounts, policy premiums, and related securities instruments and invest them in mortgages, securities, and other assets.

Financial intermediaries provide the institutional framework through which the financial system functions. They pool the funds of numerous savers, assess risks, and establish prices for securities (mortgages and other loans), and provide a cost effective method for channeling funds to users. By creating, maintaining, and offering different types of assets and liabilities, intermediaries offer a variety of choices to savers and borrowers at more attractive, appropriate prices than individuals would be able to offer.

SAVERS AND BORROWERS

The primary sources of funds available for investment at any time are the savings of households and the profits of business firms. Savings are determined by the level of income of the household and the amount of that income spent on current consumption. The amount of income spent is related to the spending habits (life style) of the household, expectations concerning future price levels, and the rates of interest that can be earned by investing some fraction of current income in an

INTENTIONAL
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earning asset. The form of investment will be determined by the saver's attitudes and expectations. The ideal investment for many savers would be the security that yields a high rate of return, has good prospects for capital appreciation, entails a minimum amount of risk of capital loss, and can readily be converted into cash. While very few investments meet all, or even most, of these criteria, all forms of investment do meet one or more.

Profits of business firms are determined by competitive forces in the economy that influence sales, costs of production and distribution, and the capital required to operate the business. Whether dividend payments are made to owners and the amount of dividend payments also determine the amount of funds available for future investment. Dividend payments made to individuals and households, of course, increase the incomes available for consumption and/or investment.

The users of funds accumulated through the savings of individuals and the earnings retained by business firms include the three major sectors of the economic system: business corporations, households, and governments. Business firms, primarily corporations but also including nonincorporated business enterprises, make up one of the largest and most active groups of seekers of credit in the financial system. They have played a dominant role in many of the swings in business cycles that have occurred during recent years. Household users of funds provided by the credit market borrow funds for current consumption as well as for investment in housing. During recent years households as borrowers have become increasingly important users of funds. As indicated in Table 1, the total volume of outstanding household debt (consumer plus mortgage) had surpassed corporate borrowing by 1979.

Table 1 also shows that governments, including local, state, and federal units, constitute the third major group of borrowers who seek funds through the financial markets. Since the spending programs of governmental agencies frequently exceed the income through taxes, fees, and other sources, the agencies must seek funds in the financial markets. At the same time many governmental units collect and hold a number of financial assets in special purpose trust accounts. These funds, household savings, and business earnings become a source of funds in the financial system.

TABLE 1. The Debt Economy (in billions $)

Type	Amount Outstanding at Year End			
	1974	1976	1979	1980
Corporate	$1,000	$1,115	$1,450	$1,750*
Mortgage	600	885	1,200	1,450
U.S. Government	500	670	920	930
State and Local Government	200	250	310	400*
Consumer	200	220	310	380*
Total	$2,500	$3,140	$4,190	$4,910

Sources: **Federal Reserve Bulletin,** August 1981, and *Authors' estimates.

FINANCIAL INTERMEDIATION AND DISINTERMEDIATION

Financial intermediation is the process through which financial resources are deposited in the major financial institutions for investment in securities, mortgages, loans, and other assets that earn income for the institution. The institutions acquire funds, i.e., savings, by offering holders a type of contract that will be more attractive than those offered by other forms of investment. Commercial banks, savings banks, savings and loan associations, and credit unions, for example, offer checking accounts that pay interest on monthly balances, and savings accounts and certificates that provide differential interest rates and maturities. Depending upon the extent to which the institution has limitations like Regulation Q placed on its freedom to offer terms sufficiently attractive to lure funds from its competitors, it will offer options to savers that are attractive and commensurate with their capacity to invest. It will permit investments that will yield a return high enough to cover the costs of obtaining funds and operating their business at a profit.

Funds obtained through the intermediation process are liabilities to the institution since they must be returned to the asset holders (savers) on terms stated in the deposit contract. These terms can be on the immediate demand of the saver, in the case of checking and passbook savings accounts, or as long as 8 to 10 years or more. The majority of savers in the United States tend to have an interest in acquiring financial assets that contain special characteristics. In the first place, they desire safety for their capital in the form of deposit insurance or some other acceptable safeguard. Safety is provided to investors in accounts in the regulated depository institutions, commercial banks, credit unions, and savings and loan associations in the form of insurance up to $100,000 in the event of failure of the institution. Funds invested in other types of investment, including common stocks and money market mutual funds, are not insured.

Savers also want convenience in dealing with the institutions to which they entrust their savings. To provide convenience to customers the institutions have opened branches and remote service facilities in residential areas, shopping centers, and major transportation interchanges. In addition, many institutions have made it possible for customers to transact much of their financial business over the telephone.

For many savers liquidity and accessibility are important features of the savings contract. A financial asset is liquid if it can be converted into cash quickly with little or no loss in value. Checking accounts (including the new interest earning NOW accounts) and passbook savings accounts at commercial banks, savings banks, and savings and loan associations are highly liquid. Other types of contracts possess less liquidity, although life insurance policies that carry cash surrender values are quite liquid. Savers also are interested in financial assets that are readily accessible and available in small denominations. Many financial securities, including U.S. Treasury Bills and money market certificates, are available in denominations of $10,000 or more which is beyond the reach of many savers. (Figure 1 illustrates the nature of the financial intermediation process.)

In contrast to intermediation, disintermediation describes the process through which funds are withdrawn from the financial intermediaries and used in other types of investment or spent on current consumption. Except for withdrawals of funds to meet current spending needs of households, disintermediation most frequently takes place when funds are withdrawn for the purpose of investment in securities sold on the open market, especially common stocks, corporate and government bonds, and money market mutual funds. The occurrence of disintermediation usually takes place during periods of high and rising interest rates when the financial intermediaries have difficulty in adjusting the rates they offer savers quickly enough to match the increases in interest rates available in the open market.

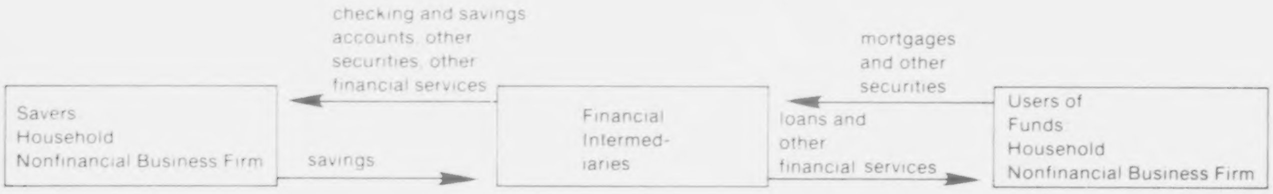
Problems associated with disintermediation have been somewhat ameliorated in recent years by the offering by financial intermediaries of floating rate (money market) savings certificates and by passage of the Depository Institutions Deregulation and Monetary Control Act of 1980. However, money market funds and other alternatives are still causing serious problems in this regard. The current round of disintermediation, as always, is impacting particularly hard on the real estate sector. This is due to the fact that the outflow of funds is primarily from mortgage lenders (savings and loan associations) to such nonreal estate entities as money market funds.

FLOW OF FUNDS

An understanding and full appreciation of the nature and operation of the mortgage market requires a look at other financial markets that function in the United States. Financial markets usually are classified on the basis of the length of maturity of securities traded in the market place. Markets where securities with maturities of less than one year are bought and sold usually are called money markets. Examples of money market financial instruments are commercial paper issued by business firms and U.S. Treasury Bills. Markets where securities carry maturities of more than one year are referred to as capital markets. Mortgages, stocks and bonds of corporations, and long-term bonds of state, local, and federal governments are examples of capital market instruments. Although the money and capital market definitions identify the two major sectors of the overall financial market, investment of funds is not restricted to one or the other. Investors frequently transfer their financial assets between short- and long-term securities, depending on their financial needs, motivations, expectations, and perceptions of risk.

A useful method for examining and improving knowledge of the relationship between money and capital markets is flow of funds analysis. This systematic analytical tool makes it possible to study both financial markets and to track with

FIGURE 1. Financial Intermediation Process


checking and savings accounts, other securities, other financial services
Savers
Household
Nonfinancial Business Firm
savings
Financial Intermed-iaries
mortgages and other securities
loans and other financial services
Users of Funds
Household
Nonfinancial Business Firm

precision the primary movement of funds from those who save, to those who use, funds.

The most useful device for depicting the flow of funds through the money and capital markets in the United States is the statistical summary prepared by the Board of Governors of the Federal Reserve System and reported on a regular basis in the **Federal Reserve Bulletin** in the flow of funds accounts tables. The tables identify the funds raised in the credit markets by major category, including mortgages, consumer loans, corporate stocks and bonds, and borrowing by local, state, and federal agencies. Annual comparisons of total amounts invested in each category show very clearly changes that occur in the volume of funds invested each year in mortgages and other forms of investment. The changes that take place from year to year indicate the fact that competition for funds does take place constantly. Every claim created by a household, business firm, or governmental agency includes an interest rate or dividend rate (expectation) that reflects the price the user is willing to pay for the use of the money. The amounts invested in each type of security, then, represent the extent to which that security has been successful in meeting competition. Year to year comparisons of changes in funds raised can be made by examining Table 2 which portrays for selected years the funds raised by major users and advanced by the major institutions, government agencies, households, and business firms.

The lower part of Table 2 identifies the financial institutions and other private and governmental agencies that invest funds they have accumulated through deposits, sales of financial contracts, or other means. Advances by these providers are made on a competitive basis and reflect the amounts directly advanced by households and business firms as well as those of financial intermediaries. The volume of direct advances provides one indication of the extent to which funds are flowing away from the financial intermediaries. As will be noted below, the amounts of funds advanced by the financial institutions are of special significance to the mortgage market because they constitute a major source of funds for investment in real estate.

TABLE 2. Funds Raised and Advanced in Credit Markets, Selected Years 1965-'80 (in billions $)

	1965	1970	1975	1976	1977	1978	1979	1980
Total Funds Raised								
U.S. Government Securities	$ 3.5	$ 12.9	$ 85.8	$ 69.1	$ 57.6	$ 55.1	$ 38.8	$ 79.2
State and Local Obligations	7.4	11.2	16.1	15.7	23.7	28.3	18.9	23.5
Corporate Bonds	NA	19.8	27.2	22.8	21.0	20.1	21.2	27.9
Home Mortgages	16.0	14.4	39.5	63.7	96.4	104.5	109.1	81.8
Multifamily Residential Mortgages	NA	6.9	NA	1.8	7.4	10.2	8.9	8.5
Other Mortgages	9.5	7.9	15.6	19.5	27.2	33.5	41.9	36.4
U.S. Government-Sponsored Agencies	NA	8.2	3.2	2.9	5.8	23.1	24.3	24.4
Mortgage Pool Securities	NA	1.6	10.3	15.7	20.5	18.3	28.1	23.2
Consumer Credit	9.4	5.4	9.7	25.6	40.6	50.6	44.2	2.3
All Other Funds Raised	26.3	30.7	16.1	59.2	92.3	138.0	146.9	127.2
Total	$72.1	$119.0	$223.5	$296.0	$392.5	$481.7	$482.3	$434.4
Total Funds Advanced								
Households	$ 2.2	$ -1.2	$ 27.1	$ 19.6	$ 30.5	$ 51.8	$ 70.8	$ 22.5
U.S. Government-Sponsored Agencies	NA	8.8	4.5	4.7	6.3	26.3	29.4	25.3
Mortgage Pools	NA	1.6	10.3	15.7	20.5	18.3	28.1	23.0
Commercial Banking System	29.3	35.7	29.4	59.7	87.7	128.8	121.1	99.7
Thrift Institutions	NA	17.8	53.7	70.9	82.3	76.0	56.2	56.1
Life Insurance Companies	NA	9.0	18.8	26.6	28.6	32.8	33.8	34.1
Private Pension Funds	NA	6.6	12.8	10.9	15.6	13.9	22.0	20.4
State and Local Retirement	NA	6.3	11.7	13.1	15.4	18.8	15.5	24.4
All Other Funds Advanced	40.6	34.4	55.2	74.8	105.6	115.0	105.4	128.9
Total	$72.1	$119.0	$223.5	$296.0	$392.5	$481.7	$482.3	$434.4

Source: **Flow of Funds Accounts**, Federal Reserve System, seasonly adjusted.
NA=data not available.

ROLE OF GOVERNMENT

The federal government exerts influence on the financial markets primarily in two ways. On one hand, when the government, through implementation of fiscal policy, incurs a budgetary surplus or deficit, the financial markets are affected. During years when the federal budget is in balance or generates a surplus (an event that has occurred only rarely during the past 50 years), the impact on financial markets is salutary. A balanced or surplus budget removes temporarily one source of demand on the pool of funds available for investment. This alleviation in demand has the tendency to ease pressure on interest rates.

When government, be it local, state, or federal, incurs a deficit in its budget, it must finance that deficit in the same manner that a household or business firm finances its need for funds (deficit). It must borrow funds in the capital market by issuing financial securities in the form of short-term bills, notes, or bonds. These notes are purchased by households, business firms, and financial intermediaries and compete with other users of funds for the supply of funds available for investment. Figure 2 illustrates the extent to which the budget of the federal government has been in balance or deficit during recent years. Since 1965, a surplus has occurred only once — in 1969, while in other years deficits have ranged from $2 billion to $65 billion.

When the federal government incurs substantial deficits in its budget, considerable pressure is exerted on financial markets. Funds that normally would be available for investment in mortgages and other securities are diverted into government securities. This diversion places upward pressure on interest rates and drives some potential borrowers out of the market. This is referred to as "crowding out" borrowers because they cannot afford to pay the higher interest rate caused by the increase in borrowing by the federal government. This phenomenon occurs unless the Board of Governors of the Federal Reserve System takes action to increase the money supply to accommodate the increase in government borrowing. Such action is known as "monetizing" the debt and is discussed in the following section on the Federal Reserve System.

Increases in the federal debt also have an impact on the savings flows of the depository institutions that are subject to ceilings on the interest rates they can offer savers (Regulation Q and Stevens Act Regulations). When the U.S. Treasury sells securities to raise the funds required to support deficits, interest rates on the government securities frequently rise to levels above the ceilings imposed by Regulation Q and the Stevens Act. Hence, funds flow into government securities and away from savings deposits, causing disintermediation. Cyclical behavior of this type has occurred frequently during recent years, as Figure 2 indicates.

THE FEDERAL RESERVE SYSTEM

The other significant way the federal government influences financial markets is through monetary policy actions taken by the Federal Reserve System (Fed). Passage by Congress of the Federal Reserve Act in 1913 created the Fed to provide the functions of a central bank for the United States. The central bank functions of the Fed are analogous to those provided by the Bank of England and other central banks throughout the world. The Fed was designed to be an independent agency, free of undue political influence, for the purpose of eliminating the frequent "money panics" that occurred in the United States during the years after 1836 when President Andrew Jackson killed the second bank of the United States. The primarily defensive role of the Fed was later replaced through amendments to the original legislation that have cast the Fed in the active role of seeking, through monetary measures, to achieve broad economic objectives, including full employment, price stability, and economic growth.

The Fed seeks to accomplish its objectives by controlling the supply of money available for spending in the economy. The money supply is broadly defined as the currency (coins and bills) in circulation and the demand deposits held by commercial banks and other regulated depository financial institutions.[1] The Fed manages the money supply, primarily demand deposits since currency is relatively fixed in supply, by establishing reserve requirements, changing the discount rate, and engaging in open market operations.

Reserve Requirements

One of the basic monetary policy tools used by the Fed to control the money supply is the imposition of reserve requirements on depository institutions. Reserves represent that fraction of deposits that must be held as cash in the institution's vault or on reserve with the Fed itself. These required reserves, which can range from 1 to 17 percent or higher, reduce the supply of funds available for investment and tend to increase the operating costs of the institution.

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[1] Since the passage of the Depository Institutions Deregulation and Monetary Control Act of 1980 and the authorization of issuance of NOW accounts by mutual savings banks, savings and loan associations and credit unions, the demand deposit base of the money supply has been broadened (see Arthur E. Warner, "A Legislative Bombshell: The Depository Institutions Deregulation and Monetary Control Act of 1980," **Business and Economic Review**, December-January 1981, pp. 18-25).

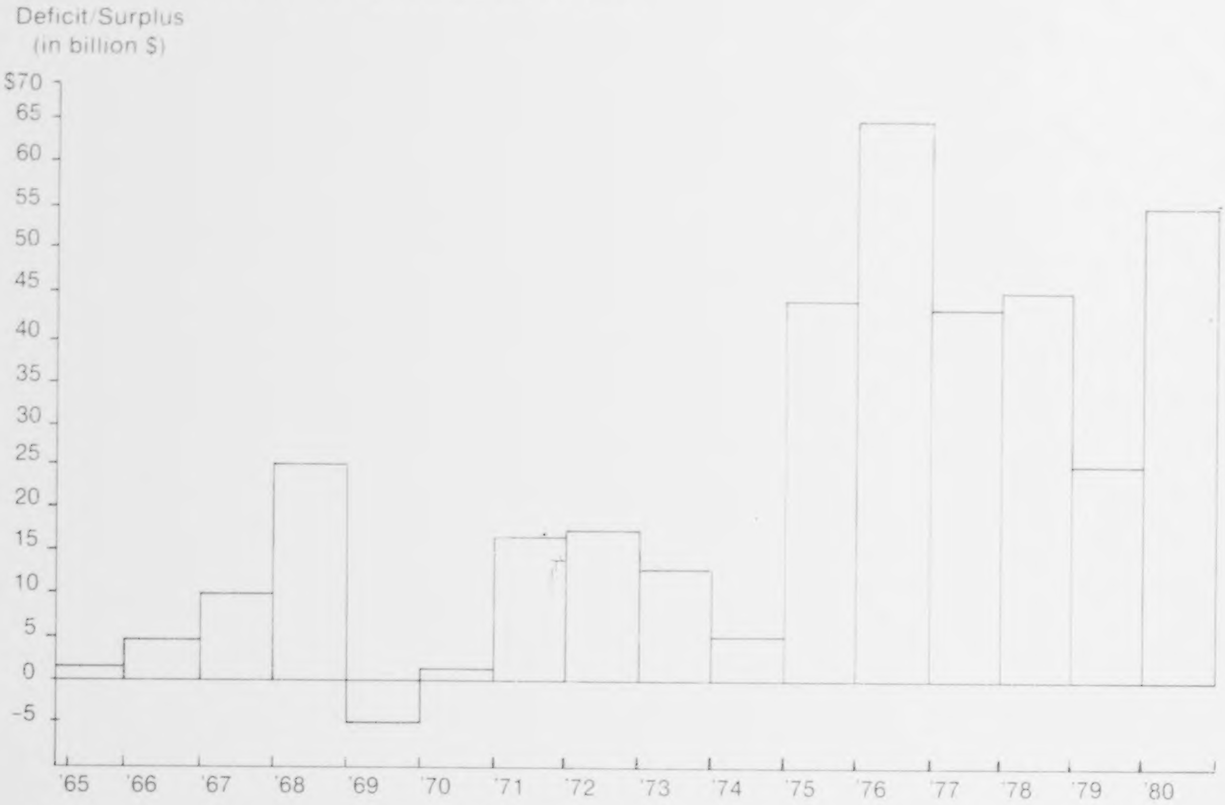
Changes in reserve requirements can exert a substantial impact on the lending ability of individual institutions and the entire financial system. When reserve requirements are increased, for example, the amount of funds available for investment declines immediately if there are no excess reserves in the system. If the Fed believes the economy is expanding too rapidly and inflationary pressures are increasing, it may increase reserve requirements to shrink the supply of money available for spending and investment. This action causes interest rates to rise to the point where eventually borrowers will delay or cancel their demand for loans.

A simplified illustration demonstrates how reserve requirements influence lending practices. If the banking system holds deposits of $1,000, reserves of $100, and a reserve ratio of 5 percent, it holds $50 in excess reserves which provide a basis for increasing its loans by an additional $1,000. However, if the Fed increases the reserve requirement to 10 percent, the excess reserves are wiped out. An increase to 15 percent would cause the banking system to be in violation of reserve requirements which would require an immediate contraction in loans. In a similar manner, when the Fed desires to expand the availability of credit, it lowers reserve requirements. If banks held no excess reserves at that moment, after the reserve requirements were lowered they would be able to increase loans by a multiple of the change in requirements.

Changing the Discount Rate

Another important tool in the kit of techniques used by the Fed in controlling the money supply is

FIGURE 2. The Federal Budget, Surplus and Deficit 1965-'80



Source: **Economic Indicators,** Council of Economic Advisers, December 1975 and December 1980.

variation in the discount rate. "Discount rate" is the term used to identify the interest rate member institutions are charged by the Fed when they borrow funds. By changing the rate charged for this direct borrowing, the Fed can encourage or discourage institutions to alter the level of their lending practices.

The Fed also uses changes in the discount rate to signal overall changes in monetary policy that can be expected in the near future. An increase in the rate usually means that a reduction in the money supply and "tight money" in the financial markets can be anticipated. A decrease in the discount rate has the opposite meaning: an increase in the money supply and the advent of "easy money."

Open Market Operations

By far the most important monetary policy making tool used by the Fed in attempting to accomplish its objectives is open market operations. Open market operations involve the purchase and sale in the open market of U.S. Government Securities of a variety of maturities. The Fed maintains a portfolio of securities exclusively for this purpose. Interest income earned on the portfolio is only incidental to this primary reason for maintaining the portfolio. Table 3 includes a statement of the securities holdings of the Fed at the end of 1980.

Open market operations are conducted by the Federal Open Market Committee which meets regularly to decide whether to buy or sell securities for the purpose of implementing monetary policy. When the Open Market Committee decides to increase the money supply, it purchases government securities from the public. This purchase is paid for with a check on the Fed which is deposited in the seller's account in a commercial bank. The deposit increases the amount of money the bank has available to lend, if it has excess reserves. When the bank lends the funds received from the sale, which it usually does to the limit of its reserve requirements, the loan proceeds are deposited in another bank which then lends the deposit up to its reserve limit. The money supply is thereby increased by the amount of the purchase price paid by the Fed multiplied by fractional reserve limits of the commercial banks that participated in the original and subsequent transactions.

When the Fed desires to reduce the money supply, it reverses the procedure and sells government securities. The Fed receives a check from the seller in exchange for the securities. This lowers deposits in the seller bank, which in turn reduces that bank's capacity to make loans. The check received by the Fed in payment for the securities is retained in its vault and does not reenter the banking system. The net result is a decrease in deposits in the banking system and an increase in government securities held by banks or the public. The Fed relies most heavily on open market operations in carrying out monetary policy because they provide more flexibility and because they are more suitable for fine tuning market conditions than changing reserve requirements or discount rates.

STRUCTURE OF THE MORTGAGE MARKET

Discussion to this point has indicated that the flow of funds through the financial system transfers funds from those sectors of the economy with an accumulation of surpluses to those sectors with a need for funds greater than their current assets. The flow depends in part on the complex system of financial intermediaries, actions taken by the U.S. Treasury in managing the public debt (fiscal policy), and decisions of the Federal Reserve System in carrying out monetary policy. Within this overall financial system, the mortgage market operates to channel funds into mortgage contracts rather than other forms of investment. In the discussion of the mortgage market that follows, it must be kept in mind that , although this market is isolated for discussion purposes, it is a part of the overall system and is influenced by, and respondent to, changes in the system.

TABLE 3. Government Securities Holdings of the Federal Reserve System December 31, 1980

Security	$ Billions
U.S. Government Issues	
Bills	$ 43.7
Notes	58.7
Bonds	16.9
Sub-Total*	$ 119.3
Federal Agency Obligations	$ 9.3
Total	$ 128.6

Source: **Federal Reserve Bulletin,** February 1981.

*Includes securities loaned — fully guaranteed by U.S. government securities pledged with Federal Reserve Banks — and excludes (if any) securities sold and scheduled to be bought back under matched sale-purchase transactions.

The mortgage market can best be described in a diagram that identifies its participants, i.e., the users and suppliers of its funds, and the ways funds are transferred between the two. Figure 3 provides such a diagram.

The main categories of financial assets are mortgages, deposits, loans, and securities. The last category includes all marketable debt of the business, state and local government, U.S. government, and U.S. agency sectors.

The sectors that supply funds to the mortgage market are savings and loan associations (SLAs), mutual savings banks (MSBs), commercial banks (CBs), life insurance companies (LICs), federally-sponsored credit agencies (FSCAs), finance and mortgage companies (FCs), real estate investment trusts (REITs), credit unions, and pension funds. The first four sectors are long-time participants in the market, while the last five are fairly recent entrants.

SLAs and MSBs acquire funds exclusively through the issuance of nonmarketable deposits to the public, while a third sector, CBs, acquires funds primarily through deposits, but also through the issuance of short-term securities, such as certificates of deposit (CDs). LICs, the fourth traditional suppliers of mortgage credit, acquire funds in the form of life insurance reserves by selling insurance policies to the public. The FSCAs acquire funds exclusively through the selling of securities, while FCs and REITs acquire funds either through bank loans or security issuances. The fact that the great majority of funds acquired by the four traditional mortgage market investors originate from the creation of deposit liabilities has had major implications for developments in the mortgage market in recent years.

A worthwhile distinction used to be made between the way "thrift" institutions — SLAs and MSBs — used funds and the way the "discretionary" institutions — CBs and LICs — used funds. The thrift institutions channeled virtually all of their available funds into the mortgage market, while the discretionary institutions exhibited a willingness to shift out of mortgages into securities or loans in response to such factors as changes in relative yields and loan demand. This distinction is no longer appropriate, however, since MSBs have clearly become discretionary investors in recent years. The FSCAs have joined SLAs as nondiscretionary mortgage market investors, in the sense that all their funds are channeled into the mortgage market. The continued presence in the market of two major sectors that show nondiscretionary investment behavior is a feature that distinguishes the mortgage market from the various securities markets and has important consequences for the operation of the market itself.

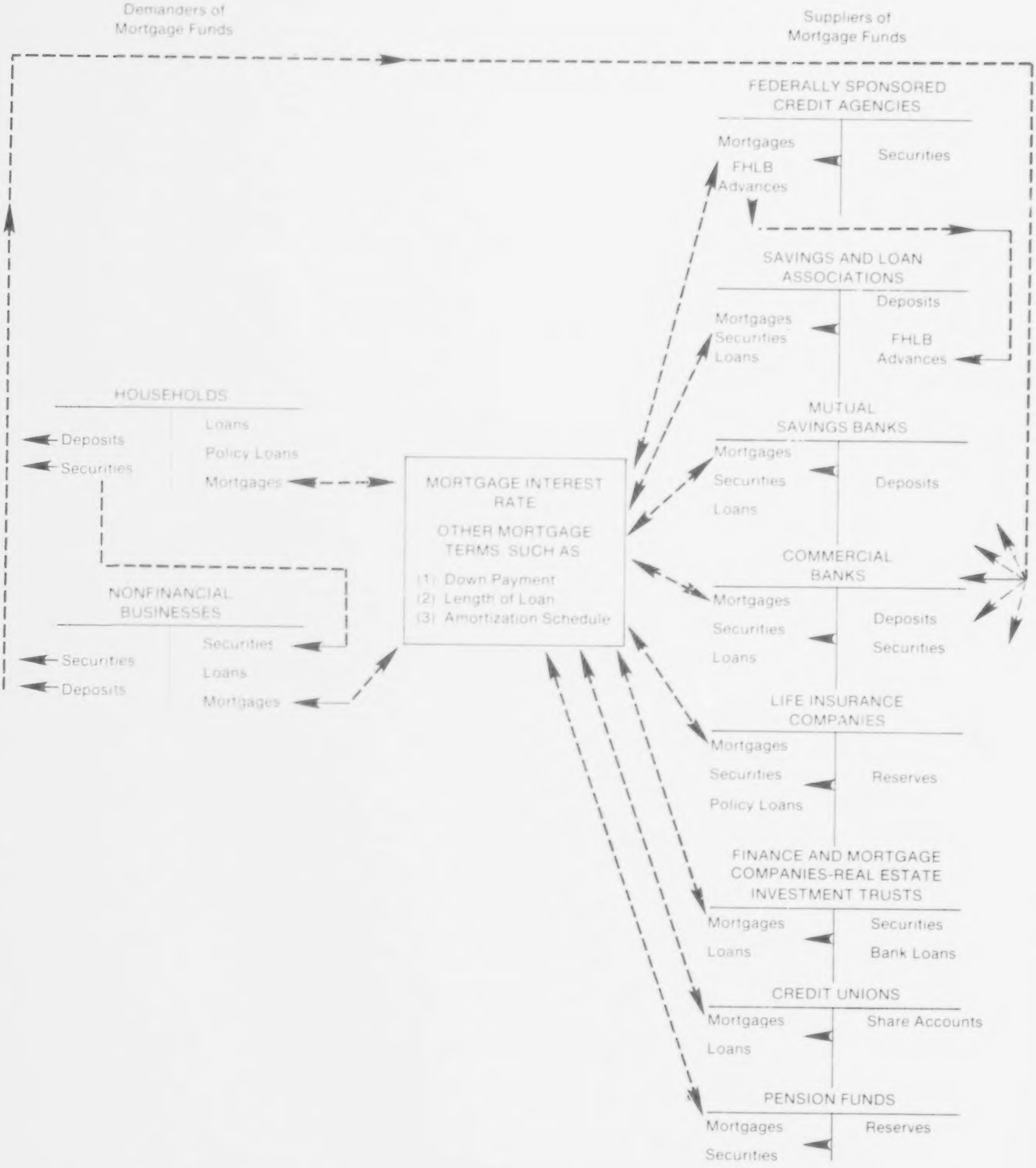
The sectors that demand mortgage credit are households and businesses. Households generally use mortgage credit to finance houses, while businesses use it to finance multifamily income-earning residential structures. It follows, therefore, that a fairly close correspondence might be expected between additions to the nation's stock of residences and the growth of mortgage credit. That expectation, however, is subject to a number of qualifications, which will be made below.

The arrows in Figure 3 indicate the directions of influence between the demand for, and supply of, mortgage credit on the one hand and mortgage rate on the other. In general, the quantity of mortgage credit demanded or supplied by a particular sector is shown as dependent on the mortgage rate. Furthermore, a shift in the demand for, or supply of, mortgage credit by any sector is shown as influencing the mortgage rate since the mortgage rate is the primary mechanism that "clears" the market, moving up to eliminate excess demand for mortgage funds and down to eliminate excess supply.

It should be noted here that there are two qualifications often made with respect to the view that the mortgage rate clears the mortgage market. First, there are a number of nonrate mortgage terms -- such as the down payment, maturity, and prepayment penalty — related to the riskiness of a mortgage. This riskiness and the mortgage rate can influence demand and supply behavior. Changes in these nonrate terms can also operate to help clear the market. Changes in the required down payment, in particular, are generally believed to play this role, reinforcing the effect of the mortgage rate on supply and demand by moving in the same direction. The second qualification, appearing in many mortgage market studies, is that neither the mortgage rate itself nor the whole set of mortgage terms clears the market. According to this view, the mortgage market frequently experiences excess demand for mortgage funds at the going set of mortgage terms, especially in periods of rising interest rates.

An additional complication in the functioning of the mortgage market is the use of mortgage lending commitments. A mortgage commitment is an agreement made by a supplier of mortgage funds with a builder to supply mortgage credit at some specified terms to the ultimate purchaser of a

FIGURE 3. The Institutional Mortgage Market


Demanders of Mortgage Funds
Suppliers of Mortgage Funds
FEDERALLY SPONSORED CREDIT AGENCIES
Mortgages
FHLB Advances
Securities
SAVINGS AND LOAN ASSOCIATIONS
Mortgages
Securities
Loans
Deposits
FHLB Advances
HOUSEHOLDS
Deposits
Securities
Loans
Policy Loans
Mortgages
MORTGAGE INTEREST RATE
OTHER MORTGAGE TERMS SUCH AS
(1) Down Payment
(2) Length of Loan
(3) Amortization Schedule
MUTUAL SAVINGS BANKS
Mortgages
Securities
Loans
Deposits
COMMERCIAL BANKS
Mortgages
Securities
Loans
Deposits
Securities
NONFINANCIAL BUSINESSES
Securities
Deposits
Securities
Loans
Mortgages
LIFE INSURANCE COMPANIES
Mortgages
Securities
Policy Loans
Reserves
FINANCE AND MORTGAGE COMPANIES-REAL ESTATE INVESTMENT TRUSTS
Mortgages
Loans
Securities
Bank Loans
CREDIT UNIONS
Mortgages
Loans
Share Accounts
PENSION FUNDS
Mortgages
Securities
Reserves

Source: This chart and accompanying text are adapted from "The Residential Mortgage Market in Recent Years," **Economic Review**, Federal Reserve Bank of Richmond, Vol. 60, September/October 1974.

residence. The commitment procedure is used by virtually all of the intermediaries to a varying degree. The supply of commitments by these intermediaries is generally thought to be a function of current and expected yields and deposit flows, while the demand for them is dependent on the number of desired housing starts by builders. In reality, therefore, there are two markets: (1) the market for mortgage funds, which is affected by past commitments, and (2) the market for commitments to supply future mortgage funds. The latter market has received scant attention from economists (an exception is a study that specifies the supply side of the market), but conceptually it is entirely possible that the set of current mortgage terms that clears the mortgage market might not clear the market for commitments.

Studies of the mortgage market generally have indicated two types of influence exerted by the market on residential construction activity. The first influence is the indirect effect of developments in the mortgage market on construction, including housing starts and other nonresidential building. For instance, a reduction in funds flowing into the thrift institutions will decrease the supply of mortgage funds, putting upward pressure on the mortgage rate. The rising mortgage rate will decrease the demand for construction. Slackened demand, in turn, will exert a number of influences on the construction sector that will signal decreased profitability to builders on construction of new units, thereby reducing desired level of building. These signals might include a decrease in the price of houses and other buildings relative to construction costs, an increase in the inventory of unoccupied units, and a slower turnover of existing units. If the mortgage market clears, then the indirect effects of the market on residential construction activity will be captured by the going set of mortgage terms. If there is credit rationing, however, construction activity will be influenced not only by the set of mortgage terms but also by the availability of funds at the institutions that supply mortgage credit.

The second channel of influence operates directly from the mortgage market intermediaries to builders via the effect of the intermediaries' willingness to make commitments. A decline in the flow of funds into the intermediaries (or a relative decline in the mortgage yield) decreases their supply of commitments to builders, whose willingness to start construction projects is then constrained. In other words, the supply of commitments is insufficient relative to the desired level of construction.

SUMMARY

This article has provided a review of the evolution of the mortgage market in this country through 1980. The following conclusions have particular implications for real estate activity nationally and in South Carolina during this decade.

1. **Effective** demand for real estate resources remains dependent upon the availability of affordable financing.

2. The mortgage market has become so integrated it now can be considered a national market.

3. Monetary and fiscal policy and the progress of financial institution deregulation will continue to have an enormous impact on the mortgage market and, therefore, on real estate.

4. South Carolina will continue to be a net importer of mortgage capital for the foreseeable future. Anyone involved in real estate decision making during this decade must of necessity carefully monitor conditions in the mortgage market.

Commercial Real Estate Activity in the 1980's

By James P. Gaines

To investors, commercial real estate represents an alternative to stocks, bonds, government securities, commodities, precious metals, works of art, or any of several other forms of investment of large amounts of capital. Historically, commercial real estate was the province of the very rich and a few developers at the local level. For others, particularly institutions, stocks and bonds totally dominated their investment portfolios. During the 1970's, the competitive position of commercial real estate appears to have shifted significantly relative to the traditional investment markets, creating a new era of commercial activity. This revolution is examined in more detail later.

Commercial real estate markets possess some similarities to the residential real estate market and a few significant dissimilarities. Both markets are sensitive to the effects of local population characteristics, general economic conditions, prevailing land use patterns, local governance, and other basic supply and demand forces. Commercial uses are especially sensitive to general economic and business conditions, the spatial distribution of residential land uses, local employment and incomes, consumer spending patterns, and transportation systems.

This brief article presents a summary of the different types of properties included under the general umbrella of commercial real estate, as well as a brief discussion of some of the more important locational factors for each. A brief recounting of commercial real estate activity during the past decade leads to a prognostication of commercial development in South Carolina during the current decade.

Significant developments in the traditional investment areas of stocks and bonds and in the areas of credit policies and actions of the Federal Reserve, recent legislation, and the continuing problem of inflation are combining to change the ground rules for commercial property investment. Large institutions using more equity capital are approaching real estate as a growth, as well as an income, investment asset.

COMMERCIAL PROPERTY TYPES

What we call the commercial real estate market is actually a collection of various submarkets identifiable by the different types of properties involved. In general, the different property types are retail uses, office buildings, and hotels-motels. Moreover, each submarket is subject to considerable stratification. Retail uses, for example, include all types of structures from superregional shopping centers to free-standing discount stores (such as K-Marts) to bowling alleys, restaurants, and key duplicating kiosks. In addition, commercial property often involves mixed uses. For example, several South Carolina cities are in various stages of developing mixed-use, downtown convention centers to combat the flight of retail uses to suburban shopping centers.

Retail Property Uses

Retail land uses can be divided between the traditional, central downtown retail areas (the city core) and suburban shopping centers. A fundamental axiom of retail activity is that the location of retail land uses follows shifts in the population. In the past, the central city was the focal point of almost all commercial activity including not only retail uses but also offices (employment centers) and hotels as well. Transportation networks focused on the central city core, with all major transportation systems — streets, rail, buses, and trolly cars — converging to the center.

To simplify somewhat, Americans' love of the automobile and desire to own their homes, in combination with the shift from an agricultural-based economy to an industrial-based, and still further to a service-based, economy, as well as the high standard of living Americans enjoy relative to the rest of the world, created the rush to the suburbs. To be sure, the process involved far more complex and subtle factors, but these were among the most significant. As people moved out of the central, downtown areas to the surrounding countryside, retailers were not far behind. Hindered by the Depression of the '30's and then the rationing of World War II, the movement of people and retailers has blossomed during the past 30 years.

The present and future problems of the nation's major cities stem, in part, from the exodus of the major share of retail activity formerly located in the city. Although the primary motivation for the flight of retail land uses was the shift in living patterns of consumers, cities further had (and continue to be plagued with) other severe problems: inadequate and expensive parking facilities, congestion, the dispersal of complementary stores over several blocks, relatively high property taxes, utilities and contract services (such as garbage

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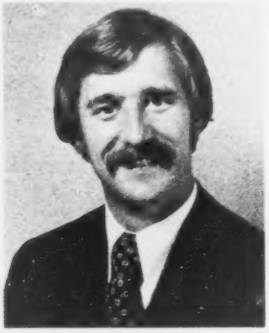

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removal), and the more recent problem of high crime rates and general lack of appeal of the downtown area to consumers.

By far the most significant evolution in retail land use development since World War II has been the growth of suburban shopping centers. There are basically four types of shopping centers: regional (and superregional) centers, community centers, neighborhood centers, and discount centers. The categories are distinguished by size, store mix, and target market. Regardless of type, however, the primary location factors are accessibility, visibility, population concentration and distribution, and consumer spending patterns.

Regional and superregional shopping centers may be as large as medium-sized towns, and, indeed, they are the principal competitors of the central retail district. Regional centers incorporate anywhere from 35 to 100 acres of land with 250,000 to 1,000,000 square feet of improved retail area. Regional centers typically have at least 2 major department stores as "anchors" with 40 to 100 other stores. The superregional centers typically are enclosed malls with at least 4 major department stores and over 100 other stores occupying more than 1,000,000 square feet of retail space. Most regional and superregional centers require a primary trade area consisting of at least 250,000 people within a radius of 15-20 miles of the center or less than a 30-minute car ride away. The primary trade areas should support about 85 percent of the center's retail business.

Community and neighborhood centers have much the same requirements in terms of general location, only at smaller level. Community centers vary in size from 80,000 to 250,000 square feet with typically a junior department store as the principal tenant. The community center normally occupies between 15 to 40 acres and relies on a primary trade area from 5 to 8 miles surrounding the center with a population of roughly 70,000 people.

The neighborhood center caters to an immediate sphere of just a few miles for its basic trade area. A supermarket, typically coupled with a variety store or a chain drug store and smaller stores selling primarily convenience goods, compose the neighborhood center. The size of larger neighborhood centers may range from 50,000 to 100,000 square feet of retail space on a 5- to 20-acre site. This type of center would also include the much smaller "strip center" containing between 10,000 and 50,000 square feet.

A relative newcomer to the retail field is the free-standing discount center. K-Mart (S. S. Kresge), Woolco (Woolworth's), Zayre's, and W. T. Grant have been leaders in the discount center movement. These 1-story structures may contain as much as 100,000 square feet of retail floor space on a 4- to 10-acre site. While often situated near major regional or community centers to take advantage of their attractions, these firms offer discount priced merchandise. In the past, discount centers sometimes included a discount supermarket, but recently these have been phased out.

Office Buildings

The geographic distribution of office space has been affected by many of the same factors as retail space. As the overall economy has shifted from agricultural to industrial manufacturing and recently to service industries, the locational characteristics of office development have shifted, too. While many types of activities continue to require central locations (e.g., financial institutions and government), others have discovered that central downtown locations are no longer essential. In general, the very large, high-rise buildings tend to have downtown locations while the suburban office complex may be only a few stories high and smaller. During the late 1960's, the office complex development emerged wherein several buildings with mixed tenants are constructed in an aesthetically pleasing suburban area with extensive landscaping, larger parking facilities, and closer proximity to residential areas.

Office development has been most exemplary of a boom-bust cycle. In many markets, office space has been developed in waves as developers, local entrepreneurs, and others have perceived under supply conditions. Thus, the supply of office space in a local market results from the long-term accumulation of long-lived office developments.

Like other real estate use categories, what is referred to as "the market" for office space is actually a combination of many submarkets. The office submarkets generally are segregated by the type of ultimate users of the space offered and the quality or location of the space provided. While quite numerous, there are four important office submarkets identified below.

1. The single-tenant building which may be developed by a corporate owner-user or which may be built to the tenant's specifications (and possibly subsidized).
2. Multiple-tenant, high-rise office buildings are the typical "skyscrapers" in the large urban areas. These types of structures are

generally found in the downtown area on the most expensive sites and provide an extensive use of a limited land area with general purpose, high quality (typically high rent) office space.

3. Multiple-tenant, low-rise office buildings may be found on the fringes of the downtown area, but are most common further out in the suburbs. These types of structures also typically provide general purpose office space of varying degrees of quality.
4. Special purpose office buildings which may require extensive physical and/or mechanical equipment alterations to accommodate specialized activities, e.g., a medical/doctors building which may need greater electrical service, greater weight bearing floors, sound proofing, and other unusual construction features.

As in most other real estate markets, the supply and demand factors in the office space market are local phenomena. While a surplus of one type of space may exist (multiple-tenant space, for example), there may be a shortage of another type of space. The local demand for office space depends in large part on the health of the local economy, the influx of new businesses, the expansion of existing businesses, and the spatial distribution of complementary activities. For the future, areas that attract service-oriented businesses (which are extensive users of office space) and areas that develop as regional, state, or national centers of commerce, transportation, or communications can expect heavy demands for additional office space and an active office market.

Hotels and Motels

Hotels and motels are highly specialized uses of real estate. Indeed, the land and building may account for only a small portion of the success or failure of the business. The location, though, can be critical. The traditional hotel with semipermanent residents is, for the most part, extinct. In today's market it is difficult to differentiate between a hotel and the motor hotel or motel.

Hotels and motels cater to a number of different markets. Hotels are located primarily in the downtown areas and cater to commercial travelers who do their business in the downtown area and/or the convention market. Convention hotels are most prevalent in cities with natural tourist attractions.

Motels are situated primarily along major transportation routes. Most common are the motels located along the interstate highways and near airports. The franchised chains, i.e., Howard Johnson's, Holiday Inn, and others, have dominated this market. During the 1960's, however, a new type of chain began based on a return to the basic principle of the motor inn or overnight cabin: a basic overnight accommodation with budget rates and a minimum of frills. The budget motels typically have no restaurant, coffee shop, or swimming pool and cater to the true transient traveler rather than the destination traveler.

The third general category is the resort hotel or motel. These establishments are located in close proximity to the physical attraction of the resort. Oceans or lakefronts, ski slopes, gambling casinos, and historic sites constitute the prime motivation for hotel development in such areas as Palm Beach, Cape Cod, Sun Valley, Lake Placid, Aspen, Atlantic City, Las Vegas, and Williamsburg.

Each type of location and clientele requires different facilities, merchandising, rate structures, and services. Moreover, the hotel-motel industry is extremely volatile. New hotels-motels cut into older hotels' business. Depressed economic conditions, gas shortages, and high-priced fuels, high unemployment rates, and layoffs all serve to lower occupancy rates and increase operating costs simultaneously.

Like the market for retail land uses, that for hotel-motel space is a derived demand. New development results if there is unfulfilled demand (waiting lists, high occupancy rates, overflows among existing hotels-motels, and so forth). Unlike retail users, though, fluctuations in the demand for transient housing are subject to wider shifts and are far more difficult to project or estimate.

BACKGROUND — THE 1970'S

The 1970's was a decade of unprecedented demand for commercial property types as well as housing. In spite of (1) the oil embargo and the resulting rise in energy costs; (2) the severest general recession since the 1930's and the accompanying credit crunch; (3) the unsettling effect of political scandal, the drop in the value of the currency, and the skyrocketing price of gold; and (4) double digit inflation and relatively high unemployment and tremendous uncertainty in the traditional money and capital markets; investment in commercial real estate in the United States actually increased, and in an impressive manner.

Because of the diversity of property types, the local nature of commercial development, and the lack of any formal record keeping procedures, it is difficult to know the precise level of commercial activity taking place. The Department of Commerce, however, which keeps records of commercial construction put in place and general construction costs, has made an attempt. The data depicted in Table 1 indicate that during the 1970's commercial construction increased slightly more than 200 percent (from $9.75 billion to just over $29.3 billion). The construction data further reveal the precipitous decline in commercial activity resulting from the 1973-'74 recession. (Note that the decline is first indicated by an almost constant amount in 1974 compared to 1973 and the continual effect which remained until 1978 when annual construction in that year exceeded the 1973 level.) It is not surprising that commercial development lags the general economy to some extent given the rather lengthy nature of the development process for even medium-sized commercial investments.

Inflation has impacted on commercial development costs during the 1970's as evidenced by the increase in average construction costs also shown in Table 1. Based on Boeckh's Composite average, the cost to construct new commercial properties more than doubled during the decade.

Commercial development in South Carolina apparently has kept pace with the national trend. The data in Table 2 on nonresidential construction indicate that from 1970 to 1980, commercial construction in the state rose nearly 193 percent, from approximately $259 million to over $758 million. The effects of the 1973-'74 recession are evident in the dramatic drop-off in construction in 1975, but overall the state appears to have recovered and moved forward more rapidly than the nation as a whole. Based on the first quarter figures for 1981, though, the tight money policies of the Federal Reserve have taken their toll on commercial development in South Carolina (as elsewhere). Extrapolating the first quarter numbers for the year, commercial construction permits may fall to about $600 million or less.

COMMERCIAL ACTIVITY IN SOUTH CAROLINA IN THE 1980's: A CRYSTAL BALL APPROACH

South Carolina can expect a prosperous decade during the 1980's. As most are aware, the South and the West are the two regions of the country experiencing growth not only in population but also in industry and commerce (a not too surprising combination!). Commercial development and activity no doubt will follow the general economic prosperity of the state. Locally, commercial developments will follow shifts in living patterns, spending patterns, transportation routes, and the spatial arrangements of commerce and business. In some cases, commercial developments will spring forth in anticipation of business and/or people to come. More likely, developments will be one step behind the people and business activities. Unlike the 1970's, though, the 1980's will have in store some significant changes in the commercial devel-

TABLE 1. Commercial Construction Completed and Construction Costs Nationally 1970-'80

Year	Commercial Construction Put in Place (millions)	Construction Cost Index (1972 = 100)	
		Apartments, Hotels, and Offices	Other Commercial-Industrial
1970	$ 9,754	85.6	85.0
1971	11,619	92.8	92.5
1972	13,462	100.0	100.0
1973	15,453	105.9	106.6
1974	15,945	115.8	118.2
1975	12,804	127.2	130.4
1976	12,756	137.3	141.5
1977	14,783	148.6	152.8
1978	18,565	158.2	164.3
1979	24,924	170.5	179.0
1980	29,340	186.0	195.2

Source: **Survey of Current Business** (selected issues). Cost data are based on the Boeckh Construction Cost Index Average of 20 cities.

TABLE 2. General Indicators of Commercial Real Estate Activity in South Carolina: Non-Residential Building Permits and Retail Sales 1960-'81

Year	Nonresidential Construction Permits (thousands)	Estimated Retail Sales (millions)
1960	$ 99,030	$ 2,368.3
1961	118,582	2,422.0
1962	126,533	2,683.7
1963	146,166	2,859.0
1964	194,770	3,056.8
1965	160,460	3,455.6
1966	244,471	3,830.4
1967	241,089	4,026.0
1968	280,590	4,540.4
1969	279,815	4,840.9
1970	259,018	5,254.5
1971	315,633	5,950.5
1972	336,018	6,792.7
1973	386,618	7,822.4
1974	471,940	8,004.5
1975	296,693	9,036.2
1976	518,772	10,190.4
1977	474,793	11,431.3
1978	504,780	12,889.1
1979	712,601	14,295.9
1980	758,629	15,855.7
1981*	154,010	3,786.5

Source: **South Carolina Economic Indicators** (Columbia, S.C.: Division of Research, College of Business Administration, The University of South Carolina).

*First Quarter.

opment ballgame. It appears that many of the shifts in the old rules being experienced nationwide will also be felt in South Carolina.

It is very difficult to generalize about commercial real estate activity due to the local nature of all but the very largest projects and the diversity of properties and investors involved. However, during the last two or three years some fairly clear trends have emerged which are at least divisible into four general categories: (1) the types of investors are changing from wealthy individuals and a few development companies to large corporations and capital rich institutions, particularly pension funds; (2) the availability, cost, and overall terms of debt funds have changed markedly to the point where the now old-fashioned fixed interest rate mortgage loan is virtually obsolete; (3) related to point number two, commercial real estate, as an investment asset, is no longer an interesting or peculiar diversion but head-on competition for stocks and bonds in attracting corporate and institutional investment capital; and (4) the influx of foreign investment in American commercial properties introduces some unique features into the market.

In point of fact, the four major trends itemized above are all highly interrelated. Interest in commercial real estate by institutional investors was triggered by several key events. The Employment and Retirement Income Security Act (ERISA) loosened the investment reins on pension funds allowing them to invest in real estate ownership mainly through commingled funds. The upheaval in the traditional capital and money markets, with interest rates skyrocketing and bond prices plummeting, not only caused long-term fixed interest mortgages to become economically unfeasible but also shattered institutional investment portfolios dominated by bond holdings. In effect, institutions became interested in equity investments with protection from the deleterious effects of inflation. Commercial real estate beckoned as a viable candidate such that currently, for the first time in recent memory, much of the commercial real estate developments underway or in planning are financed extensively with equity capital.

Returns on high quality commercial real estate have remained fairly stable relative to numerous other investment assets. In many cases rents are only lately beginning to keep pace with increased costs, and prices for quality commercial space have more than kept even with inflation. This latter point is so significant that commercial properties are now considered as growth investments with returns being measured in terms of income returns after debt service and taxes plus realizable value appreciation upon sale.

South Carolina is sharing the growth and general economic prosperity of the so-called Sunbelt throughout the southern part of the United States. Industry has been moving into the state at an historically unprecedented pace: during the 1970-'79 period industrial investment amounted to over $7.8 billion as compared to slightly more than $3.9 billion during the 1960-'69 period. Foreign investment in South Carolina is evidenced by the new Michelin Tire plant in Lexington County and the Belgian arms maker Fabrique Nationale's machine gun assembly plant in Richland County. (More on industrial development in South Carolina can be found in Mrs. Nancy Grden-Ellson's article, this issue.)

South Carolina's population increased 18.5 percent between 1970 and 1980, from approximately 2.6 million to just over 3 million. Even more dramatic has been the increase in the number of housing units in the state. As of April 1, 1980, there were an estimated 1,147,866 units, an increase of nearly 41 percent over the 1970 estimate of 815,309 units.

More people, more industry (which means more jobs), greater earnings, and more disposable income lead invariably to increased business activity. Table 2 includes retail sales for South Carolina annually from 1960 through the first quarter of 1981. These data clearly reveal that South Carolinians are enjoying greater prosperity and are purchasing more commodities than ever before.

South Carolinians' earnings and prosperity are expected to continue during the remainder of the twentieth century. The U.S. Department of Commerce forecasted average annual growth rates for five key economic variables for the country and for each state. Table 3 contrasts the department's expected national growth rate with each region and with South Carolina. The data cover total personal income, population, per capita personal income, earnings, and employment. As these data reveal, South Carolina is expected to grow in each category at a faster rate than the country as a whole and at about an equal pace with the Southeast region.

As described earlier, the demand for commercial real estate is a derived demand. What these data indicate is that conditions in South Carolina are excellent for continued demand of retail and office space. It is important to note, too, that the demand is highest in areas of population concentration, i.e., the major urban areas. The majority of commercial activity can be expected to occur in the three Standard Metropolitan Statistical Areas in South Carolina: Charleston-North Charleston (which incorporates Berkeley, Charleston, and Dorchester Counties), Columbia (incorporating Lexington and Richland Counties), and Greenville-Spartanburg (incorporating Greenville, Pickens, and Spartanburg Counties). Other areas of potential commercial activity are Aiken, Anderson, Florence, Myrtle Beach-North Myrtle Beach, Rock Hill, Sumter, and Orangeburg.

It is interesting to observe that the downtown effort of South Carolina's three largest cities is almost identical. Each city has used a combination of local, as well as federal, funds to develop

TABLE 3. Average Annual Growth Rate in Selected Aggregates, United States, Regions, and South Carolina 1969-'78 and 1978-2000

Area	Total Personal Income[1]		Population		Per Capita Personal Income[1]		Earnings[1, 2]		Employment	
	1969-'78	1978-2000	1969-'78	1978-2000	1969-'78	1978-2000	1969-'78	1978-2000	1969-'78	1978-2000
United States (percentage)	3.5%	3.3%	0.9%	0.8%	2.6%	2.5%	2.9%	3.3%	1.9%	1.2%
	Index, U.S. average annual growth rate = 100									
United States	100	100	100	100	100	100	100	100	100	100
Southern-Western regions[3]	137	116	179	156	122	103	145	115	155	135
Rocky Mountain	166	130	257	209	133	103	191	132	218	172
Southwest	162	123	221	180	140	104	178	122	185	148
Southeast	137	119	160	136	129	113	142	116	139	127
Far West	118	106	164	157	102	89	123	106	150	131
Northern-Central regions	71	85	31	43	85	98	65	86	52	63
Plains	102	95	61	74	117	102	108	96	100	81
Great Lakes	81	89	41	60	95	99	79	91	64	76
New England	63	87	54	64	66	95	56	88	63	70
Mideast	54	75	3	6	72	97	39	75	19	40
South Carolina:										
Percentage	4.9%	4.0%	1.4%	1.1%	3.4%	2.9%	4.1%	3.9%	2.6%	1.5%
Index	138	120	159	131	130	116	141	116	137	124

Source: "Regional and State Projections of Income, Employment, and Population to the Year 2000," **Survey of Current Business**, Vol. 60, No. 11 (November 1980): 44-70.

[1] Calculated on 1972 dollars.

[2] Earnings consist of labor and proprietors' income.

[3] Includes Alaska and Hawaii.

centrally located convention centers incorporating all three principal commercial uses: hotel, office, and retail space (plus parking, a notorious problem in all three areas). The Greenville Commons is scheduled to open in early 1982 and will preceed the other two by at least a year or more. The $35 million project has already signed IBM as the major tenant of the five-story office complex. Hyatt will operate a 350-room hotel within the center with facilities for large banquet and exhibit halls.

Charleston and Columbia are at various stages in developing, with city sponsorship, their own downtown hotel/office/retail centers. The locally controversial centers are being relied upon to rejuvenate commercial-business activity in the central business districts of each city. The $57 million Charleston Center, located in the block bounded by Market, Meeting, Hasell, and King Streets, will include a 431-room contemporary hotel surrounded by renovated shops in the older buildings along Market and Meeting Streets. The center will include parking for 500 cars as well as a retail center at the corner of Hasell and King.

Columbia's Palmetto Center is projected to cost $55 million and will involve city, federal, and private funds. The center is expected to include a Marriott Hotel, office space (including the recently controversial Palmetto Building), a convention center, an auditorium, retail space, and a 1,000-car parking garage. Nearly half of the projected cost is devoted to sinking the railroad tracks on the western half of the city, a project which, alone, might spur additional commercial activity.

These three cities all faced a similar problem and chose to solve it in the same way. All three centers are the result of the exodus from Main Street of Penny's and Belk's to suburban regional shopping centers: Haywood Mall in Greenville, The Citadel Mall in Charleston, and Columbia Mall in Columbia. These very recent retail centers should dominate major retail activity in each city for the next few years. Neighborhood strip centers and a few free-standing discount centers may develop. In Columbia, for example, several developers have plans and sites for a second superregional mall, but these are probably at least five years from opening. In Charleston, or more specifically Mount Pleasant, there are plans for a 650,000 square foot regional mall which may ultimately include other commercial uses on a 130-acre track.

CONCLUSIONS

The twin problems of inflation and high interest rates both lure and repel commercial development. The cost of funds make many projects uneconomical in light of current rental rates. On the other hand, inflation causes the development costs of both land and construction to go up while the developer waits for lower cost funds. In addition, rents, which generally lagged behind inflation during most of the '70s, are beginning to come around as much of the excess commercial space built during the early part of the decade has finally been absorbed.

The game of commercial real estate development in South Carolina, as well as the nation, has changed. Projects will be undertaken involving highly structured financial arrangements, most typically some type of joint venture or lender participation. However, the fundamental market conditions which must prevail to encourage any development have not changed — people, jobs, and income must coexist to make any type of commercial development feasible. South Carolina's future for the next decade would appear bright with these basic ingredients.

Industrial Real Estate in the 1980's

By Nancy Grden-Ellson

The Sunbelt's reputation for attracting new industry continues to grow as both foreign and domestic firms choose to locate or expand here. A 1980 **Business Week** survey of corporate executives indicates that 40 percent favor the South Carolina Atlantic states for plant locations — a full 10 percent over the nearest rival, the West South Central States.[1] In a similar survey commissioned by the Conference of State Manufacturers' Associations (COSMA), 8 of the top 12 states preferred for industrial locations are in the Southeast.[2]

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[1] **Business Week**, "Plant Site Location," a survey of **Business Week's** executive subscribers to industry (1980), p. 7.

South Carolina's reputation for attracting new industry parallels that of the Southeast. In both studies mentioned above, South Carolina ranked third (behind Texas and North Carolina in the **Business Week** survey and behind Mississippi and North Carolina in the COSMA study). Further, a larger portion of the respondents in the 1980 **Business Week** survey selected South Carolina than in an identical survey taken only 4 years earlier.[3]

Statistics on industrial development in South Carolina support its reputation. Since 1950, 1,864 new plants have located in this state. In 1951, 81 plants either located in South Carolina or expanded their existing operations, creating 9,000 new jobs with $91.5 million of investment. Since that time, the number of new and expanded plants has increased each year. In 1980 alone, 675 plants expanded or located here creating 14,530 jobs with $1.5 billion of investment[4] (Table 1). Investment has occurred primarily in "growth industries" such as chemicals and metalworking, followed by textiles and paper and printing[5] (Table 2). Further, foreign investments, particularly from German, British, and French firms, comprise a large share of this new industrial development. Prior to 1960, foreign firms invested $79.5 million in South Carolina while in 1980 alone they invested over $348.9 million[6] (Table 3). As a result of this activity, South Carolina ranks sixth in the nation for the number of new jobs created between 1968 and 1978.[7]

But — will this rapid pace of industrial development continue into the next decade? And, more importantly, can South Carolina accommodate it if it does? This article considers these questions and suggests what the state must do to anticipate and prepare for the likely growth of industrial development during this decade.

TABLE 1. South Carolina New and Expanded Plants by Calendar Years

Year	Number of Plants	Number of Jobs	Investment (000s)
1951	81	9,000	$ 91,513
1955	119	12,500	224,934
1960	151	11,792	209,759
1965	226	26,447	600,006
1970	135	10,530	319,456
1975	133	6,020	511,445
1976	151	9,532	487,685
1977	648	17,602	1,235,171
1978	470	14,173	857,233
1979	726	21,598	1,541,135
1980	675	14,530	1,515,643

Source: Planning and Research Division, South Carolina State Development Board.

GROWTH PROJECTIONS THROUGH THE YEAR 2000

Both private and public forecasters see growth in population, employment, and income for the Southeast and South Carolina that exceeds projections for the nation as a whole. For example, the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce projects that for each year between 1978 and 2000, **"based on an extension of past economic relationships,"** total personal income will increase 3.3 percent for the nation, 3.9 percent in the Southeast, and 4.0 percent in South Carolina. Similarly, employment in the United States will increase only 1.2 percent, but in the Southeast and South Carolina, it will increase 1.5 percent.

Population and per capita income are projected to exhibit similar trends. Between 1978 and 2000, population in the United States will increase .8 percent each year, but in the Southeast and South

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[2] Alexander Grant & Company. **A Study of Business Climates of the Forty-Eight Contiguous States of America**, prepared for the Conference of State Manufacturers' Associations (COSMA) (March 1979), p. 8.

[3] **Business Week**, p. 7, and Alexander Grant & Company, p. 8.

[4] South Carolina State Development Board, "South Carolina New and Expanded Plants by Calendar Years" (1981), p. 1.

[5] South Carolina State Development Board, "Investment-New and Expanded Plants for the last Two Decades by Industry" (1981), p. 1.

[6] South Carolina State Development Board, "Foreign Investment by Manufacturing Plants by Country" and "Value of Foreign Manufacturing Investments by Year" (December 1980), p. 1 of each.

[7] Alexander Grant & Company, p. 8.

TABLE 2. Investment — New and Expanded Plants — for the Last Two Decades by Industry

Industry	1960-'69		1970-'79	
	Dollar	Percentage of Total	Dollar	Percentage of Total
Food	$ 49,709,000	1.3%	$ 204,010,000	2.6%
Textiles	918,456,000	23.3	977,906,000	12.5
Apparel	99,424,000	2.5	82,311,000	1.1
Wood and Furniture	73,253,000	1.9	170,330,000	2.2
Paper and Printing	329,337,000	8.4	395,285,000	5.1
Chemical	1,366,664,000	34.7	2,908,782,000	37.2
Metalworking	793,849,000	20.1	1,950,159,000	24.9
Remaining	309,682,000	7.8	1,135,041,000	14.5
Total Investment	$3,940,374,000	100.0%	$7,823,824,000	100.0%

Source: Planning and Research Division, South Carolina State Development Board.

Carolina, it will increase 1.1 percent. While per capita income in the Southeast and in South Carolina will still be below the national average, it will increase by 2.5 percent in the United States, by 2.8 percent in the Southeast, and by 2.9 percent in South Carolina. Finally, earnings, the major component of income, will increase by 3.3 percent in the United States and by 3.9 percent in the Southeast and South Carolina.

For South Carolina, it is manufacturing of durable goods, as well as the finance, insurance, and real estate industry, that account for the largest increases in earnings and employment 1978-2000. While South Carolina will have an average annual growth rate of 3.9 percent in earnings each year, earnings in the durable goods industries will increase by 5.2 percent, in the finance, insurance, and real estate industries, by 4.7 percent. While the state will show a 1.5 percent increase in employment each year during that period, the durable goods industries will exhibit a 2.5 percent growth rate and the finance, insurance, and real estate industry should have a 2.7 percent growth rate. The nondurable goods industries, however, will employ the most people.[8]

WHAT FACTORS INFLUENCE INDUSTRIAL GROWTH?

The litany of factors encouraging this economic development in the Sunbelt is now well known. The BEA projections described above are justified based on the

> continuation, at a dampened rate (for the entire nation), of the tendency for manufacturing and related private service-type industries to disperse to the South . . . to benefit from relatively low wages, taxes, energy costs, and land costs, and the relatively mild climate. The population advantage is based on a projected advantage in employment . . .[9]

Further, over two-thirds of the **Business Week** respondents indicated that a favorable labor climate, favorable attitudes among community residents toward industry, ample area for expansion, reasonable costs of property and construction, and access to utilities are important in the industrial location process.[10]

Another dimension of those factors influencing industrial location is the role of government in directly or indirectly encouraging such development. The COSMA study examines the role of government by defining "business climate" as "the aspect of the business environment directly controllable by the actions of state government." Of the 18 factors developed in the COSMA study, South Carolina ranks within the top 10 states for 7 of those factors — union membership as a percentage of total labor force, manhours lost due to work stoppages, worker's compensation insurance rates, average weekly manufacturing wage rates, state and local taxes per capita, state spending per capita, and vocational education spending per capita.[11]

An area of growing importance, though, is the provision by state and local governments of specific incentives or concessions to attract industry. South Carolina offers a number of such incentives to encourage industrial location in this state. The best known of these include a statewide technical education system that trains new employees for specific positions, use of industrial revenue bonds (IRBs), a five-year exemption on local property taxes, and no manufacturers' inventory tax on raw and certain other goods. In addition, local governments in this state provide their own packages of incentives and concessions. The South Carolina State Development Board has also been established to streamline the site selection process for business and to encourage industrial development.

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[8] Bureau of Economic Analysis of the U.S. Department of Commerce, "Regional and State Projections of Income, Employment, and Population to the Year 2000," **Survey of Current Business,** Vol. 60, No. 11 (November 1980), pp. 44-65.

[9] Bureau of Economic Analysis, p. 46.

[10] **Business Week,** pp. 5-6

[11] Alexander Grant & Company, pp. 9-26.

South Carolina is hardly alone in the use of special incentives to attract industrial development. In fact, the competition among states for devising new incentives to attract industry has intensified in recent years. South Carolina now ranks fifth in the number of special tax incentives and laws it provides, and seventh in pollution control incentives. However, it ranks considerably lower in other measures of industrial assistance. For instance, the Palmetto State ranks 35th in financial assistance to industry and 27th in special services for industrial development. Further, it ranks 29th in the types of projects permitted to be financed with industrial revenue bonds.[12]

TABLE 3. Value of Foreign Manufacturing Investments by Year (thousands of dollars)

Year	Amount
1980	$ 348,908
1979	392,535
1978	208,205
1977	408,162
1976	186,005
1975	58,800
1970	72,300
1965	79,250
1960	32,083
Grand Total	**$3,060,179**

Country	Percentage of Total Foreign Investment
Austria	Less than .1%
Belgium/Luxembourg	1.1
Canada	2.2
Denmark	.1
France	19.0
Germany	32.3
Great Britain	20.7
Japan	9.1
Netherlands	6.6
South Africa	.2
Switzerland	8.6
Taiwan	Less than .1
	100.0%

Source: Planning and Research Division, South Carolina State Development Board.

HOW IMPORTANT WILL THESE FACTORS BE IN THE FUTURE?

While the South will enjoy economic growth over the next decade, it may be less than projected as the Sunbelt and South Carolina begin to lose their competitive edge for attracting industrial development. This will occur for two reasons: (1) The Sunbelt and South Carolina will no longer be havens for low-cost labor, land, housing, and construction as the demand generated from the industry already in place pushes these costs toward those prevailing in other regions of the nation. (2) The use of special incentives will become, and already is becoming, so universal among the 50 states as to obviate their inducement effects on industry.

The costs of wages, construction, land, and other factors of production are likely to increase in South Carolina over the next decade. The BEA projects that per capita income for the Southeast will converge upward to the national average by the year 2000 and will converge downward in the higher cost areas of New England and the Great Lakes[13] (Chart 1). While manufacturing wages in South Carolina are among the lowest in the nation, they were also among the fastest growing nationally and in the Southeast 1978-'79 with a growth rate of 9.4 percent compared to a growth rate of 8.4 percent in the United States as a whole.[14] Consumer prices also increased more in the South in recent years than they did in other regions of the nation. The South has ranked second consistently in the four regions for growth in its consumer price index[15] (Table 4). All in all, "the South will no longer be able to market itself on the basis of cheap labor, inexpensive housing, or lower overall living costs."[16]

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[12] "The Fifty Legislative Climates," **Industrial Development** (March-April, 1981), pp. 6-11.

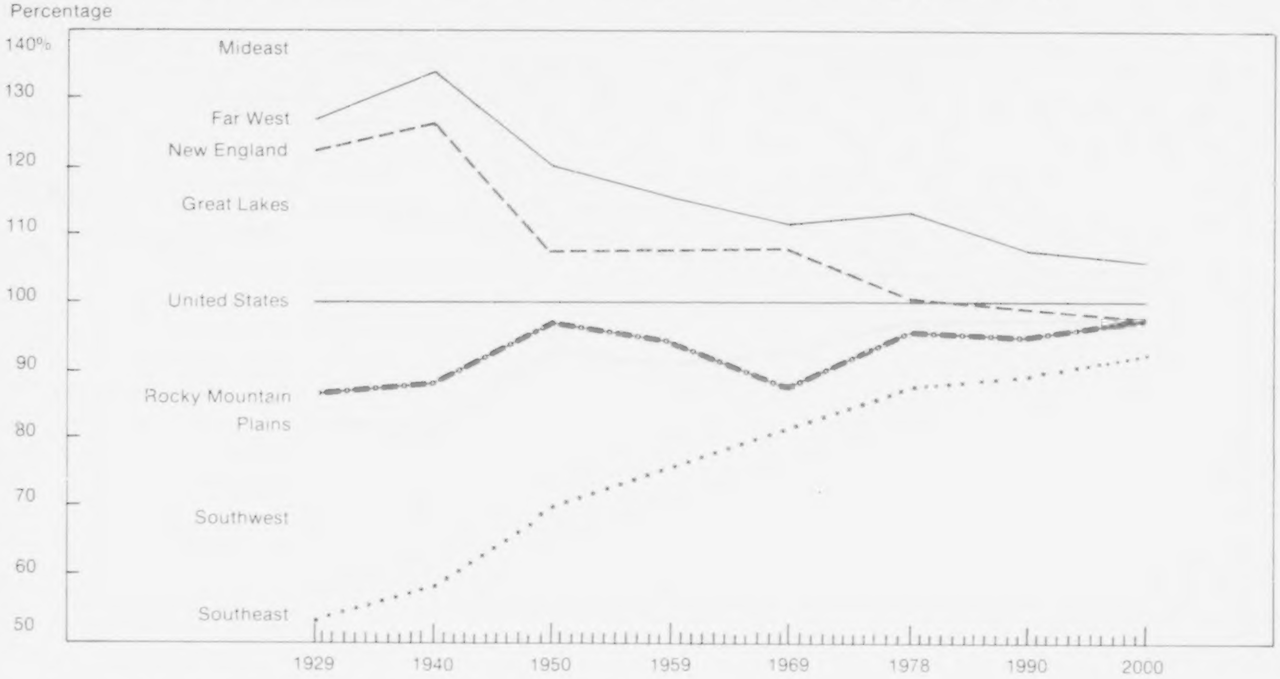
[13] Bureau of Economic Analysis, p. 46.

[14] "Industrial Growth Factors in the United States, "**Site Selection Handbook,** Conway Publications (1981), p. 152.

[15] Bureau of Labor Statistics, U.S. Department of Labor, **Consumer Price Index Detailed Report** (April, 1981), p. 50, (April, 1980), p. 51, (April 1979), p. 63.

[16] Jan Stucker, "Sunbelt Losing Living Cost Edge," **The Columbia Record** (November 16, 1980).

CHART 1. Per Capita Personal Income as a Percentage of the U.S. Average (1929-2000)



Source: Bureau of Economic Analysis, U.S. Department of Commerce

The effects of special incentives provided by state and local governments are likely to become diluted over the decade. Chart 2 shows the growth of the use of special incentives between 1966 and 1980. With two exceptions, the use of incentives has increased substantially since 1966. Now 47 states have city or county revenue bond financing for industry, while 28 had this provision in 1966. When state agency revenue bond financing is added, only 1 state, Idaho, has no form of tax-exempt industrial revenue bonds (although enactment is considered likely there this year).

Currently, 46 states have an inventory tax exemption on goods in transit and a tax exemption on raw materials in transit as compared to 32 states in 1966. Further, 43 states have an exemption on manufacturers' inventories, while only 19 had such a provision in 1966. Other types of incentives, while not as geographically widespread, have grown as well. Tax exemptions to encourage research and development have increased from 3 to 11 states, tax exemptions on land and capital improvements have increased from 11 to 29 states, and state matching funds for city or county industrial financing programs have increased from 5 to 10 states.[17]

Local governments also play an important role in attracting industry. City and county governments may extend water and sewer lines for rural or suburban locations and/or exempt industry from certain fees for those services in the early years of operation. Local governments often will provide property tax concessions or use their ability to raise funds through taxation or issuance of industrial revenue or general obligation bonds to construct training facilities or to finance plant construction.

How long, though, can these concessions and incentives continue? If a local government over-extends itself by too much reliance on bonds, the citizens, the state government, and the financial markets will soon short-circuit that approach. Further, a Congressional clampdown on the proliferation of IRBs is likely in the near future. The overuse of tax concessions is equally nettlesome since "when tax concessions are granted, one of the basic purposes for attracting new industry to an area is lost — that of increasing the tax base."[18] Changes in federal grant-in-aid programs also will have repercussions for local governments. Funds for water and sewer lines are likely to be phased

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[17] "The Fifty Legislative Climates," p. 5.

[18] James Toncre, **Industrial Development in a Rapidly Growing Community,** Financial Publishing Company, Boston, Massachusetts (1972), pp. 70-71.

TABLE 4. Differential Growth In Regional Consumer Price Indices

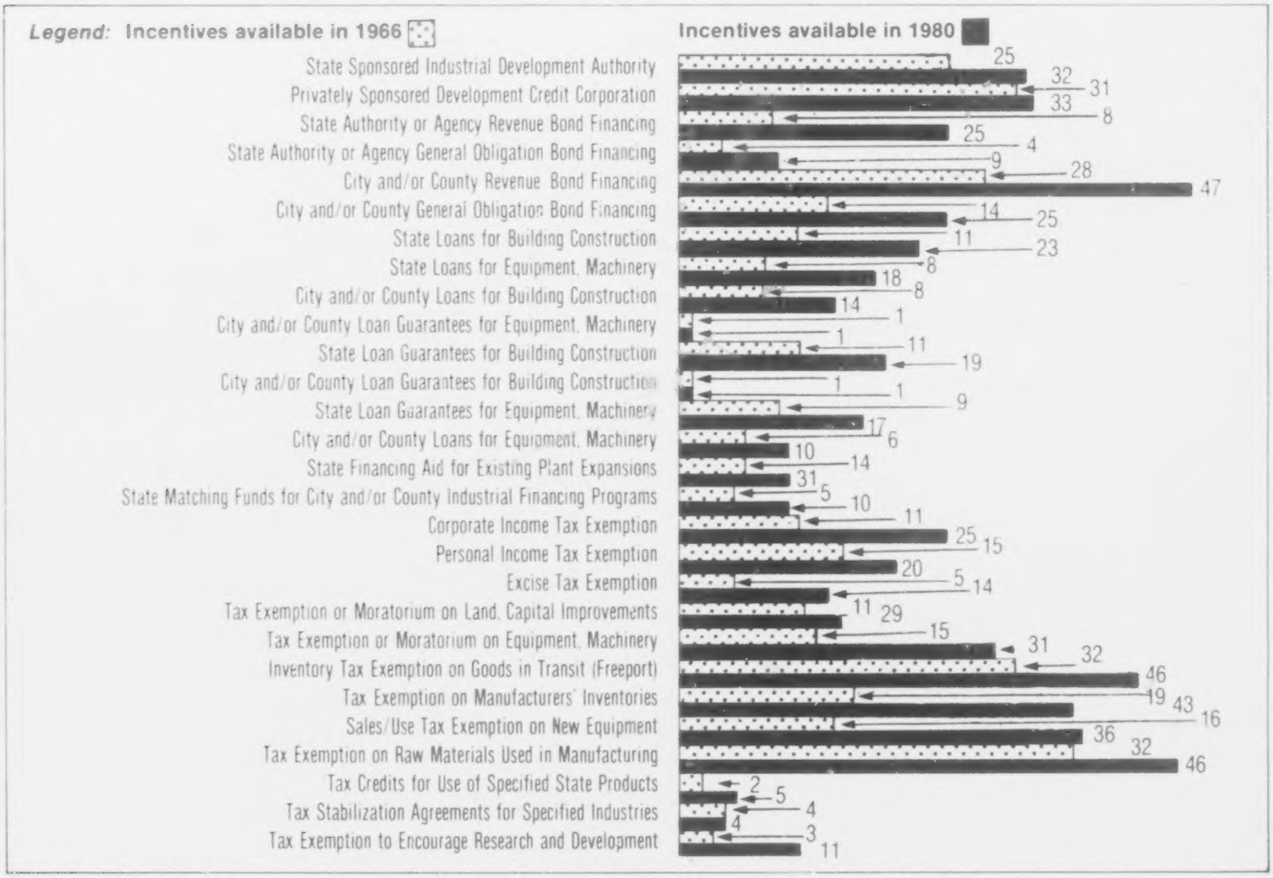
Region	Consumer Price Index April 1981	Change from April 1980 to April 1981	Change from April 1979 to April 1980	Change from April 1978 to April 1979
Northeast	140.5	10.8%	13.2%	9.2%
North Central	143.7	9.4	14.2	11.4
South	**144.4**	**10.4**	**14.6**	**10.8**
West	145.2	9.4	16.6	10.4

Source: Bureau of Labor Statistics, U.S. Department of Labor.

out within the next few years, and federal funds for highway construction and maintenance and public transportation will be cut as well. Local governments cannot depend on state government to pick up the slack in funding, and current sources of revenue for South Carolina local governments are limited. As a result, local governments in the state may not be financially able to offer handsome packages of incentives and concessions to a potential industry.

Further, will a point be reached when the citizens of the state decry, for environmental or fiscal reasons, this quickened pace of industrial recruitment? Examples to support this premise may be more than isolated. Several environmental groups in the state have raised questions about individual industrial location decisions and their effect on environmental integrity. Local governments can also expect closer scrutiny of incentives offered to industries as the competition among

CHART 2. The Expansion of Business Incentives 1966-'80 (for All 50 States)



Source: "The Fifty Legislative Climates," **Industrial Development** (March-April, 1981).

local governments intensifies and if the public suspects the increased use of sub rosa concessions to an industry.

STRATEGY FOR THE DECADE

Changes in the importance of these factors attracting industry to the Sunbelt and to South Carolina will necessitate a change in the state's industrial development strategy for the next decade. Several options are possible. The state could simply accelerate the use of incentives to keep pace with other states, demonstrate that South Carolina is "serious" about attracting industry, and offset the slower pace of industrial development in the Southeast. On the other hand, a more selective approach could be taken in which certain types of industry, and certain geographic areas, would be targeted as part of a broad economic development strategy for South Carolina.

The state is being swayed in both directions, but the latter appears to be gaining some momentum. For example, the Governor's Council on Rural Development is completing work on a rural development policy that has a strong industrial development component. The council plans to finish work on the document by the end of the year and will present it for adoption by the Governor and the legislature in 1982. While a broad approach is fraught with difficulties since (1) it is useless without formal adoption and (2) it is an arduous task to establish the consensus needed for formal adoption, it nevertheless is a useful first step in setting industrial development goals for South Carolina.

This policy is just one manifestation of a growing rural bias in economic development on the part of the Governor and the State Development Board. The board has initiated an industrial development program for rural counties, and the Governor has proposed a program in which a firm would receive a tax credit of $200 per job created in a rural county. While the proposal was not approved by the legislature this year, it will be reconsidered next session.

The question at this point is whether an industrial development policy so obviously skewed to rural counties is in the best interests of the state. For example, the Governor's Department of Economic Development and Transportation has designated 16 rural counties as "distressed," based on several economic criteria. However, while there are 11,300 people unemployed in these 16 counties, there are over 15,000 people unemployed in Charleston, Greenville, and Richland Counties alone. And, while 124,000 families are below the poverty level in those 16 counties, 471,000 families are below the poverty line in the other counties of the state. Further, some counties do not have the access to transportation, labor pools, or infrastructure needed to sustain increased economic development. It is for these reasons that firms are reluctant to locate in rural counties.

A more useful approach is to consider regions of contiguous counties (which are connected to one another by a county that serves as the growth node) as the basis for an industrial development strategy.

> The nodal (growth) counties . . . do possess the necessary infrastructure for increased economic activities. The growth of nodal counties will provide employment opportunities for residents of the linked counties . . . By investing in the nodal growth counties, higher benefit to cost ratios can be achieved vis-a-vis investing (individually) in the linked counties.[19]

A preliminary system of economic development regions for South Carolina has been proposed in a recent Division of Research publication and is depicted in Table 5. Aside from the obvious advantages mentioned above, the regional growth node approach is precisely that — regional, not necessarily rural. Such a state policy, therefore would acknowledge the importance of currently-developed counties for attracting industry while still benefitting the linked rural counties.

Once this policy is adopted, specific state and local actions can ensure that it will guide industrial location decisions. Communities, with assistance as needed from state government, could prepare actual sites — not just zone for them, and establish industrial parks. While the State Development Board has already encouraged communities to designate sites through the Governor's Rural Economic Achievement Trophy (GREAT Towns) program, and while undeveloped land is available in the state, sites with the necessary prerequisites of infrastructure, access, compatibility with environmental controls, and utilities are more limited. Further, industrial parks are growing in importance to industry because the site selection process is simplified. A recent survey by the Industrial Development Research Council found that 40 percent of manufacturing plants and over 50 percent of warehousing and distributing facilities are located in industrial parks.[20]

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[19] Division of Research, College of Business Administration, The University of South Carolina, **Interindustry Linkages of Manufacturing Firms in South Carolina** (1981), pp. 192-193.

[20] "Planned Office and Industrial Parks Continue to Proliferate," **Site Selection Handbook**, Conway Publications (1978), p. 430.

Funds for local governments are another critical element for the economic development regions approach. Such funds underpin industrial development with an adequate base of infrastructure, roads, housing, and education. New sources of revenue for community and county governments, such as a local option sales tax, need to be authorized by state enabling legislation. Local governments must also consider more fee-for-service arrangements with industry for construction and for use of water, sewer, and other facilities. Further, in view of cuts in federal domestic assistance programs and the possible establishment of federal block grants with the remaining funds, South Carolina must consider (1) providing community development and other funds to local governments directly and/or (2) targeting federal block grant funds to support the regional development strategy described above. Finally, changes in the state's annexation laws are needed to permit further annexation, city-county consolidation, and other cooperative city-county arrangements so that revenues and services can be distributed in a more efficient and equitable manner.

TABLE 5. Preliminary South Carolina Economic Development Regions

Region 1	Region 2	Region 3
**Anderson Cherokee *Greenville Oconee Pickens *Spartanburg Union	Chester Lancaster *York	Abbeville *Greenwood **Laurens McCormick
Region 4	**Region 5**	**Region 6**
Bamberg Calhoun Fairfield Kershaw **Lexington Newberry **Orangeburg *Richland Saluda	Aiken Allendale Barnwell Edgefield	*Beaufort Hampton Jasper
Region 7	**Region 8**	**Region 9**
Clarendon Lee *Sumter	**Berkeley *Charleston Colleton Dorchester	Chesterfield **Darlington Dillon *Florence Georgetown **Horry Marion Marlboro Williamsburg

Source: Division of Research, College of Business Administration, The University of South Carolina, **Interindustry Linkages of Manufacturing Firms in South Carolina** (1981).

*Designates primary growth nodes.

**Designates secondary growth nodes.

Aside from these fiscal changes, each local governing body should also establish guidelines, subject to public review, for the types of services, concessions, and incentives it is prepared to offer industry. They should anticipate the impact of a proposed industry on the community by using existing economic modeling techniques. For example, the Division of Research in the College of Business Administration at The University of South Carolina has developed the South Carolina Econometric Model to forecast the impacts of an industrial location decision on the economy of the community and state (see the October 1981 issue of this publication). The Department of Agricultural Economics and Rural Sociology at Clemson University also has an impact model which has been used in such communities as Johnsonville, Walterboro, and Spartanburg.

At the state level, other changes may be in order. The Tax Study Commission, comprised of four members of the House, four members of the Senate, and four members appointed by the Governor, is an ideal body to examine the tax incentives already provided by South Carolina for their utility in attracting industry. The commission could also (1) recommend what new types of tax incentives, if any, may be needed to ensure the regional development strategy described earlier; (2) examine the relationship between changes in federal tax laws and their effect on location in the state; and (3) determine the need for any tax concessions for specific types of industries.

Energy considerations also promise to be important to industries considering locating in South Carolina. This state is not an energy-producing one. The COSMA study ranks it 32nd in energy costs per million BTUs and 25th in percentage change in energy cost per million BTUs.[21] The South Carolina Public Service Commission, as part of its responsibility to meet the energy demands of consumers, commercial users, and industry, has developed an econometric model to forecast supply of, and demand for, energy throughout the decade. Its analysis should be incorporated with the other state and local actions supporting the economic development regions strategy.

CONCLUSION

It is evident that industrial development in South Carolina is likely to continue through the next decade; however, the pace will not be as rapid. Factors inducing industry to locate here and elsewhere in the Southeast will lose their potency as the economic advantages of the area decrease and as the use of incentives by all states increases.

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[21] Alexander Grant & Company, pp. 12-13.

The challenge for South Carolina, then, is to devise a strategy such as the economic development regions described above and tailor state and local laws and policies to support it. While this strategy is established by government, it incorporates location factors of prime importance to industry. It also capitalizes on agglomeration economies, or those benefits resulting from concentration of industries — still another location factor important to the private sector. This strategy builds on industry's predisposition to locate in growing counties and does not try to force it into areas that cannot, independently, support industrial growth. Further, while it focuses on counties that are growth nodes, it directly benefits the linked rural counties as well.

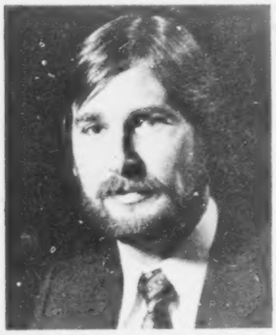
Finally, this strategy is compatible with political objections to rigid government-directed growth policies in South Carolina, and is realistic in view of the slower pace of industrial development likely to occur in the Southeast. To contort industrial development into geographic areas unattractive to them in this economic climate is to lead to the loss of industrial prospects altogether.

The Real Estate Outlook for South Carolina

By Richard W. Ellson

INTRODUCTION

One of the most difficult economic sectors to forecast is the regional real estate market. There are a number of aspects that can be analyzed, however, with the use of our South Carolina Econometric Model. (See the October 1981 issue of this publication for an overview of this model.) For example, housing and nonresidential construction are important components of the South Carolina economy. The latter in particular will ultimately be translated into permanent employment through new plants and expansions of existing ones. An econometric model allows us to trace these effects. Other major elements include savings flows and lending by financial institutions in the state. Therefore, the following discussion outlines some of the inherent problems in modeling real estate related activity and presents a forecast of certain key variables for South Carolina.



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FORECAST

The difficulty in modeling this sector stems from several factors, but three primarily. First, the availability of consistent time-series data is a persistent problem. For example, one would optimally have data on the housing construction "pipeline" which would include the number of permits issued, the number and type of housing starts, and completions at each point in time. Other relevant data would include land availability, housing characteristics and price information. For nonresidential construction, some breakdown of the types of projects undertaken would be desirable. Although bits and pieces of these data are collected

TABLE 1. Number of Housing Units

Quarterly Data	Historical			Percentage Change from Previous Quarter		
1978.1	5,694					
.2	6,063			6.5%		
.3	5,260			(13.2)*		
.4	4,307			(18.1)		
1979.1	5,213			21.0		
.2	7,782			49.3		
.3	6,437			(17.3)		
.4	5,490			(14.7)		
1980.1	4,400			(19.9)		
.2	5,011			13.9		
.3	6,560			30.9		
.4	4,311			(34.3)		
	SCOPT	**Percentage Change from SCCON**	**SCCON**	**Percentage Change from Previous Quarter**	**SCPES**	**Percentage Change from SCCON**
1981.1	4,366	2.4%	4,264	(1.1)%	4,229	(0.8)%
.2	4,974	4.7	4,749	11.4	4,595	(3.2)
.3	5,585	5.7	5,285	11.3	4,959	(6.2)
.4	5,740	7.6	5,333	0.9	4,979	(6.6)
1982.1	6,073	8.6	5,590	4.8	5,088	(9.0)
.2	6,568	8.3	6,065	8.5	5,367	(11.5)
.3	6,947	7.7	6,451	6.4	5,771	(10.5)
.4	7,252	8.1	6,709	4.0	5,928	(11.6)
Annual Total	**SCOPT**	**Percentage Change from Historical/ SCCON**	**Historical/ SCCON**	**Percentage Change from Previous Year**	**SCPES**	**Percentage Change from Historical/ SCCON**
1978			21,324			
1979			24,922	16.9%		
1980			20,282	(18.6)		
1981	20,665	5.3%	19,631	(3.2)	18,762	(4.4)%
1982	26,840	8.2	24,815	26.4	22,154	(10.7)

*Negative numbers are in parentheses.

by various private and public groups, they are generally inconsistent with respect to both the time and type of information. In South Carolina, only housing and nonresidential permit data are provided on a consistent time-series basis (monthly).

A second problem is related to the extreme volatility of this sector. The "boom and bust" cycle is a well-recognized characteristic of real estate markets. Part of this volatility is attributable to the fact that housing and nonresidential construction are very sensitive to fluctuations in interest rates. Since monetary policy has tended to be rather inconsistent in recent years, there have been unprecedented changes in interest rates. Another factor contributing to current volatility is the changing structure of financial markets. The advent of new types of savings instruments, the development of secondary markets, and substantial regulatory changes have combined to make the forecasting of housing finance an extremely difficult task. A third issue related to the volatility problem is the fact that real estate is used as a hedge during periods of high inflation. Speculative influences are hard to differentiate from expected housing demands based on demographic trends.

The third aspect to be considered is the number of economic sectors that must be analyzed in order to forecast residential real estate activity. For example, the demand for housing will be determined by demographic trends such as net migration, the age structure of the population, and the affordability of housing. On the supply side one must consider the availability of capital, interest rates, and input costs. These factors are in turn determined by other economic sectors. For example, net migration is a function of economic opportunities in South Carolina, among other factors. Nonresidential construction is even more difficult to model. Although general economic growth is one of its primary determinants and is relatively easy to forecast, many investment decisions are based on less tangible corporate perceptions of the economic desirability of a region. Unfortunately, this aspect is intractable in a formal modeling framework.

For these reasons, one must approach the modeling task with considerable care and flexibility. The model must be continually updated and revised to incorporate new data in addition to institutional changes. A basic framework is described next.

The specific real estate sector of our model is currently composed of approximately 14 equations. The finance side receives particular attention. For savings and loans associations, savings deposit flows are broken down into passbook and greater than passbook accounts. Additional sources of funds include interest credited on savings accounts

TABLE 2. Savings and Loans — Loans Closed, Total Purchase (millions of dollars)

Quarterly Data	Historical	Percentage Change from Previous Quarter
1978.1	$123.5	
.2	143.8	16.4%
.3	132.1	(8.1)*
.4	103.8	(21.4)
1979.1	83.0	(20.0)
.2	136.8	64.8
.3	141.4	3.4
.4	110.7	(21.7)
1980.1	75.2	(32.1)
.2	86.9	15.6
.3	163.2	87.8
.4	134.7	(17.5)

	SCOPT	Percentage Change from SCCON	SCCON	Percentage Change from Previous Quarter	SCPES	Percentage Change from SCCON
1981.1	$104.5	1.2%	$103.3	(23.3)%	$102.9	(0.4)%
.2	123.1	11.8	110.1	6.6	106.6	(3.2)
.3	143.2	16.7	122.7	11.4	107.9	(12.1)
.4	112.1	11.5	100.5	(18.1)	87.9	(12.5)
1982.1	116.2	6.4	109.2	8.7	74.9	(31.4)
.2	140.6	10.0	127.8	17.0	101.4	(20.7)
.3	196.3	26.5	155.2	21.4	139.5	(10.1)
.4	153.5	30.7	117.4	(24.4)	96.5	(17.8)

Annual Total	SCOPT	Percentage Change from Historical/ SCCON	Historical/ SCCON	Percentage Change from Previous Year	SCPES	Percentage Change from Historical/ SCCON
1978			$503.2			
1979			471.0	(6.2)%		
1980			460.0	(2.5)		
1981	$482.9	10.6%	436.6	(5.1)	$405.3	(7.2)%
1982	606.6	19.0	509.6	16.7	412.3	(19.1)

*Negative numbers are in parentheses.

TABLE 3. Savings and Loans — Total Savings (millions of dollars)

Quarterly Data	Historical	Percentage Change from Previous Quarter
1978.1	$4,290.8	
.2	4,414.3	2.9%
.3	4,572.5	3.6
.4	4,670.0	2.1
1979.1	4,791.4	2.6
.2	4,882.3	1.9
.3	4,981.3	2.0
.4	5,064.4	1.3
1980.1	5,112.3	1.3
.2	5,203.3	1.8
.3	5,333.9	2.5
.4	5,472.2	2.6

	SCOPT	Percentage Change from SCCON	SCCON	Percentage Change from Previous Quarter	SCPES	Percentage Change from SCCON
1981.1	$5,651.0	0.6%	$5,616.1	2.6%	$5,600.6	(0.3)%
.2	5,820.2	0.9	5,770.2	2.7	5,740.2	(0.5)
.3	5,872.7	0.5	5,842.7	1.3	5,821.7	(0.4)
.4	6,034.6	1.2	5,964.4	2.1	5,903.8	(1.0)
1982.1	6,265.2	1.5	6,175.2	3.5	6,083.3	(1.5)
.2	6,421.8	1.5	6,324.0	2.4	6,144.9	(2.8)
.3	6,553.2	2.0	6,423.1	1.6	6,243.4	(2.8)
.4	6,684.5	2.8	6,500.8	1.2	6,410.9	(2.9)

Annual Total	SCOPT	Percentage Change from Historical/ SCCON	Historical/ SCCON	Percentage Change from Previous Year	SCPES	Percentage Change from Historical/ SCCON
1978			$4,486.9			
1979			4,925.6	9.8%		
1980			5,280.4	7.2		
1981	$5,844.6	0.8%	5,798.4	9.8	$5,766.6	(0.5)%
1982	6,481.2	2.0	6,355.8	9.6	6,195.6	(2.5)

*Negative numbers are in parentheses.

and advances from the FHLB. On the asset side, equations for construction loans as well as loans for purchase are estimated. A similar, though less detailed, framework was done for commercial banks in South Carolina. In particular, commercial/industrial and real estate loans are incorporated. Key explanatory variables in these equations include general economic activity and interest rates.

The second key sector is demography. New construction will be determined in part by new residents (net migration) and the number of persons in the prime home-buying age group. In our model, net migration is related to general economic conditions such as the unemployment rate and new job opportunities in South Carolina.

Next, the financial and demographic variables are used to estimate the construction of new single and multi family housing units. Other explanatory variables include interest rates and lagged construction activity. As noted above, new construction is actually represented by permits. Obviously, housing permits are related, but clearly are not equal, to actual starts. Data limitations, however, preclude the use of actual housing starts. Nonresidential construction activity is determined by the lending activity of banks, investment flows to South Carolina, and general economic conditions.

The final step is to produce a forecast of relevant variables in the model. Unfortunately, since our model is quarterly, it is appropriate only for short-run (about 2 years) forecasts. Furthermore, it is necessary to make some national projections in order to generate a forecast for South Carolina. Thus, we have adopted 3 possible national scenarios for 1981 and 1982 which can be called optimistic, pessimistic, or consensus conditions. The former assumes relatively vigorous economic growth with moderating interest rates, while the pessimistic forecast assumes the opposite. The consensus forecast represents moderate growth combined with slowly declining interest rates.

As an illustration, four variables are analyzed: Total New Housing Units, Total Loans Closed for Purchase (Savings and Loan Associations), Total Savings Capital (Savings and Loan Associations), and the value of Nonresidential Construction Permits. The optimistic forecast is represented in the tables by SCOPT and the pessimistic and consensus conditions by SCPES and SCCON, respectively.

From Table 1, it is clear that new housing construction has declined significantly from the peak 1979 period. Since high interest rates (SCPES) are prevailing at this point in time, the decline in

TABLE 4. Nonresidential Construction Permits (thousands of dollars)

Quarterly Data	Historical	Percentage Change from Previous Quarter
1978.1	$109,651	
.2	124,193	13.3%
.3	117,808	(5.1)*
.4	153,128	30.0
1979.1	166,812	8.9
.2	172,280	3.3
.3	165,969	(3.7)
.4	209,355	26.1
1980.1	199,900	(4.5)
.2	209,600	4.9
.3	139,500	(33.4)
.4	196,400	40.8

	SCOPT	Percentage Change from SCCON	SCCON	Percentage Change from Previous Quarter	SCPES	Percentage Change from SCCON
1981.1	$166,486	6.4%	$156,486	(20.3)%	$137,030	(12.4)%
.2	143,242	7.4	133,384	(14.8)	123,384	(7.5)
.3	176,486	17.3	150,470	12.8	140,972	(6.3)
.4	174,665	20.8	144,569	(3.9)	134,198	(7.2)
1982.1	172,929	14.6	150,953	4.4	139,178	(7.8)
.2	177,877	16.2	153,119	1.4	141,061	(7.9)
.3	181,832	17.4	154,878	1.1	142,204	(8.2)
.4	186,052	17.3	158,625	2.4	146,313	(7.8)

Annual Total	SCOPT	Percentage Change from Historical/ SCCON	Historical/ SCCON	Percentage Change from Previous Year	SCPES	Percentage Change from Historical/ SCCON
1978			$504,780			
1979			714,416	41.5%		
1980			745,400	4.3		
1981	$660,879	13.0%	584,909	(21.5)	$535,584	(8.4)%
1982	718,690	16.4	617,575	5.6	568,756	(7.9)

*Negative numbers are in parentheses.

the rate of construction is 25 percent from 1979 to 1981. Although a strong rebound is possible in 1982, this depends on mortgage rates falling into the 12-13 percent range from the current 16+ percent, as well as the interest rate on construction loans (usually the prime rate plus 2 percent) declining to approximately 16 percent. Clearly, this forecast indicates that there is a strong element of pent-up demand for housing in South Carolina. Whether this demand is satisfied depends on the course of interest rates for the remainder of this year and 1982.

Loans for the purchase of housing closely reflect new housing activity (Table 2). Essentially, declines in lending activity occur in 1981, with the reduction particularly severe under pessimistic conditions. In 1982, loan activity soars under the optimistic and consensus conditions of significant declines in mortgage interest rates. If these rates remain high, however, new loans for purchase are substantially dampened (SCPES). After adjusting for inflation, they actually decline.

The primary source of loanable funds, total savings, also has interesting implications (Table 3). Under all three sets of economic conditions, total savings increase over 1980, but the increase is relatively small in real terms. The nominal increase represents the fact that savers are able to get a rate of return in excess of the inflation rate. During the 1970's, this was rarely the case. Furthermore, households have tended to draw down their accounts in recent years as inflation has outpaced their incomes. Accordingly, part of the forecasted increase is attributable to households replenishing their savings. One cautionary note should be added. A major source of competition for savings and loan associations is money market funds. Since sufficient historical data are not available on the flow of savings to these funds, the growth in savings capital depicted in Table 3 may well be overstated.

Finally, the value of nonresidential construction permits is shown (Table 4) to be extremely sensitive to high interest rates. The decline exceeds 20 percent under consensus conditions and is nearly 30 percent in the worst case. Although some improvement is expected in 1982, the level of activity would remain below that realized in 1980. This is particularly significant since the health of the South Carolina economy is closely related to investment decisions by South Carolina firms and by new firms locating in the state.

SUMMARY

This article has attempted to review the development of the South Carolina Econometric Model as it applies to specific forecasts of real estate activity in South Carolina in the near future. Clearly, the dynamics of the mortgage market profoundly affect the outlook for real estate construction and sales in this state as well as the nation. To restate the obvious, the outlook for the remainder of 1981 is not favorable, primarily because of persistent high interest rates. However, there can be some improvement in 1982 if interest rates moderate, and growth could be substantial if interest rates fall to normal levels in real terms (2-3 percent above the inflation rate). Current trends, unfortunately are not very encouraging, and since the federal government does most of its financing in the fourth quarter of each year, the most available outlook is for a continuation of the pessimistic conditions described above.

What's Ahead in the Real Estate Market: A Real Estate Executive Looks at the Crystal Ball

By Jeremy G. Wilson

Real estate in the 1980's, particularly in South Carolina and more particularly in Columbia, should be as exciting as any investment or business in the country. Just as we had ups and downs in the 1970's with great expansion in the early 1970's and severe recession in the field in the mid-1970's, we will have similar fluctuations in the 1980's.

In the last 10 years, the single family housing market has been through unprecedented growth, stretching from the spotty, crazy California 40-50 percent annual increases to the 7-10 percent ranges in more conservative areas of the country. We have seen large developers nationally and locally make dramatic stops during the credit crunches of 1976 and 1981. If there has been one major change, it would be that both the developers and lenders remember 1976 and have taken steps to insure that they will not be caught with great inventories again. We did not have an FHA 235-program with fields being pushed up daily for new subdivisions and millions of new houses in various stages of completion.

The single family residential market of the real estate business is influenced far more by government regulation, both monetarily and environmentally, than the commercial market areas. The single family house to Americans is like the flag and apple pie, but unlike these latter, it will not be available to all people again. As much as many of us feel that government interference and regulation is undesirable, it is necessary through money supply control or guarantee if we are to have even a portion of the earlier single family starts. Short-term debt for housing through adjustable rents, participation, etc. can be handled by some; it is not a solution for middle to lower income people who do not have the disposable income to pay higher rates when required. The second government factor, environmental controls, must be eased only if we want to try to offer single family housing to a majority of people. The cost of increased approval time, settling ponds, storm sewers, smoke detectors, and other costly items must be weighed against their value before being required. Costs will continue to rise during the 1980's; however, we will see a substantial move toward multifamily housing in all areas of the country. Some of these will take the form of co-ops and condominiums, but a majority in the form of apartments, most being owned, or partially owned or financed by the large conglomerates.

Office buildings in the 1980's will be larger on the whole, located in the larger cities, and, in most cases, jointly owned by developers and financial/conglomerate corporations. The South Carolina market will, as it did in the 1970's, have its ups and downs. The average rent nationwide is $16 to $22 per square foot; the Columbia market is $7.50 to $13.00. Even though there is little space available, there is little incentive for the "big" companies to look at Columbia today unless they look at the past. Then, there is reason.

Jeremy G. Wilson is Vice-President in Charge of Leasing and Property Management for the Keenan Company/Realtors, Columbia. An Instructor for the Realtor's Institute and the USC College of General Studies' Continuing Education Program, he is also Co-Producer of a course and several seminars on investment real estate. Wilson is past President of the S.C. Institute of Real Estate Management and a former Director of the S.C. Realtor's Association, and is a member of the National Association of Realtors, the Realtor's National Marketing Institute, and the Columbia Board of Realtors.

	1970	1980	Projected 1990
Building Cost	$25/SF	$45/SF	$65/SF
Rental Rate	$5.50	$13.00	$26.00
Expense Cost	$1.25	$3.25	$6.00

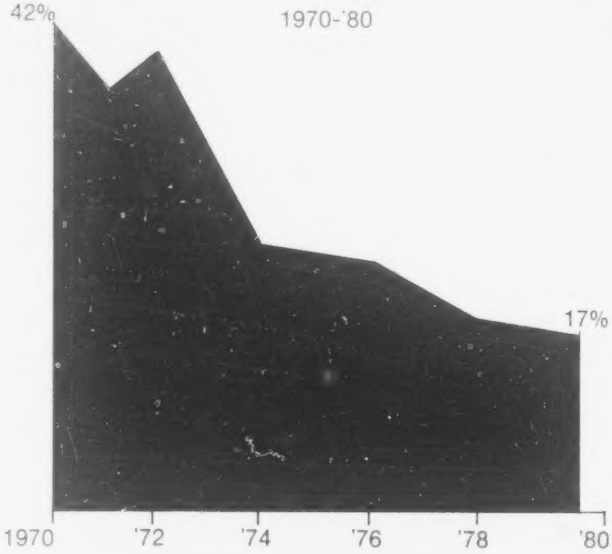
Like the housing market, the office market during the mid-1970's had both a strong building period and a period of overavailability. The addition of the First National Bank at 210,000 square feet, Dutch Center with 105,000 square feet, 2221 Devine Street with 100,000 square feet, and Landmark IV with 65,000 square feet, all coming on the market within months of each other, left several developers talking to themselves. The absorption rate was slow and rates held steady for several years. Those who were able to hold on are now in the catbird seat and able to compete nicely rate-wise with any new building. Because of the former experience, the new federal building, completed in 1980, with 400,000 square feet, scared some of us badly. The square footage in the federal building equalled the total of the major commercial office space in Columbia in 1970. The absorption went by without a ripple and space formerly occupied by the federal government was re-rented at twice the rents. Columbia is in the right place for a major financial/business city, and the office business is only going to improve. Rates, lease terms with CPI escalators, and length (shorter) will change dramatically over the next 10 years.

The retail market now is similar to the office market in 1979 in Columbia. There is both more and better space than anyone needs today. Again, however, tomorrow is a different story. With three additional malls being considered by major developers, Columbia's retail market will not be recognizable as the same Main Street town of the early 1970's. Like the office building and housing businesses, the long-term owners are going to be the pension funds, and financial institutions and conglomerates; anyone else holding on to the coat tails will probably do well.

The raw land business needs to be divided into two categories: timber and farm land and development property. The bloom is on farm land and off development property, primarily because both farm and timber land can be put into production immediately and the present holding cost of development property is economically marginal unless the property can be developed at once.

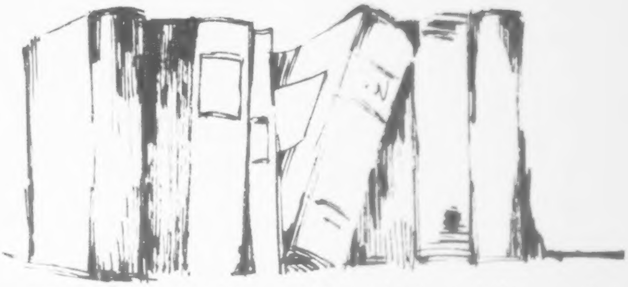
Timber lands have moved up nationally and locally for several reasons. A change in policy prohibiting exploitation of West Coast timber lands' being cut has brought substantial money to South Carolina and the Southeast for timber use. Many Americans and foreigners have suddenly realized that this is one natural resource that is renewable, and one that deserves to have time and money spent on it. Prices have increased 15 to 20 percent per year over the last several years and there is little reason to think this will change. Current projected demand indicates we will be substantially shy of requirements needed 25 years from now. This further indicates additional trees should be in the ground today or supply will be short. Ownership has changed from the small farmer and local timberman to the large conglomerate, foreign investors, and pension trusts. In the past, we often overlooked this as the property with risk, small show, and no cash flow — we may have missed the boat.

FIGURE: Percentage of Families Able to Buy a Median Priced Home



Sources: 1970-'76, **The Nation's Housing;** 1977-'80, estimates by U.S. Shelter Corporation.

Landmark IV.



The Management Bookshelf

By Dwight Gardner, Business Librarian, M.B.A., M.S.L.S.

The Management Bookshelf is a service to our readers provided by the Elliott White Springs Library of the College of Business Administration of The University of South Carolina.

REVISING BUSINESS PROSE

by Richard Lanham
Charles Scribner's Sons
597 Fifth Ave.
New York, NY 10017
1981, 98 pp., $9.95 hardback, $3.95 paperback

The author, Director of the UCLA Writing Programs, describes his approach to combating the indecipherable bureaucratic jargon often found in government and business writings. His approach, termed The Paramedic Method, is based on a concise 8-step guide to revising The Official Style (bureaucratese) into plain, basic English prose. He also includes an appendix of English grammar terms.

ECONOMICS DECIPHERED: A LAYMAN'S SURVIVAL GUIDE

by Maurice Levi
Basic Books
10 East 53rd St.
New York, NY 10022
1981, 306 pp., $13.95

This book presents a clear explanation of basic economic concepts without resorting to mathematics, graphics, or technical jargon. The author utilizes a question and answer format in presenting the material, and illustrates his points with examples, often humorous, drawn from everyday life. Also included is a list of the more important books and authors in the field, as well as a brief description of each work.

COMPUTER SECURITY: A MANAGEMENT AUDIT APPROACH

by Norman Enger and Paul Howerton
AMACOM
135 West 50th St.
New York, NY 10020
1980, 264 pp., $21.95

Computer Security covers such problems as theft, fraud, vandalism, and unauthorized access to data. It provides audit checklists to help identify security risks and also suggests procedures for controlling personnel, software, and the computer's environment. A review of legislation in the field of computer crime and privacy is included.

THE SKILLS OF NEGOTIATING

by Bill Scott
Halsted Press
Box 1313
Somerset, NJ 08873
1981, 244 pp., $21.95

A practical guide to developing or improving one's negotiating expertise, this volume covers how (1) to prepare for a negotiating session, (2) to conduct and structure a successful session, and (3) to bid and bargain. It would have applications in such areas as industrial relations and purchasing and salary negotiations, among others.

MANAGING CAREER DEVELOPMENT

by Marilyn A. Morgon
D. Van Nostrand Co.
135 W. 50th St.
New York, NY 10020
1980, 285 pp., $9.95 paperback

This volume is a collection of articles on career planning and development originally published in such magazines as the **Harvard Business Review**, **Psychology Today**, and **Business Week.** The topics covered include development of a career perspective, mid-life career problems, and the price of success.

STATISTICAL ABSTRACT OF THE UNITED STATES, 1980

U.S. Bureau of the Census
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
1981, 1025 pp., $13.00 cloth, $10.00 paperback

This effort represents the latest yearly edition of a valuable collection of facts and figures on the nation's economic, social, and political aspects. It contains over 1,500 tables of both current and historic statistical data, a guide to statistical sources, and a list of 800 publications on 50 topics.

* * *

Readers are invited to submit titles of books that they wish to call to the attention of others.

STATISTICAL INDICATORS OF SOUTH CAROLINA BUSINESS

ITEMS	June 1981	June 1980	Latest Month Percentage Change from Year Ago
Deposits, Member Banks ($ millions)	$ 5,519.8	$ 3,079.0	+ 79.3
Demand	2,390.5	1,562.0	+ 53.0
Time	3,129.3	1,517.0	+106.3
Loans, Member Banks ($ millions)	NA[e]	2,157.0	—
Savings in Savings and Loan Associations ($ millions)[b]	5,685.6	5,259.0	+ 8.1
Sales and Use Tax Collections ($ thousands)	49,127.8	44,466.5	+ 10.5
Labor Market:			
Civilian Labor Force (thousands)	1,376.0	1,335.7	+ 3.0
Employment	1,267.5	1,227.1	+ 3.3
Rate of Unemployment (percentage)[c]	7.9	8.1	- 2.5
Nonfarm Wage and Salary Employment (in thousands)[c]	1,199.4	1,191.3	+ 0.7
Manufacturing[c]	389.2	387.6	+ 0.4
Contract Construction[c]	71.5	75.7	- 5.5
Transportation and Public Utilities[c]	54.6	53.6	+ 1.9
Wholesale and Retail Trade[c]	229.2	227.0	+ 1.0
Finance, Insurance, and Real Estate[c]	49.5	48.4	+ 2.3
Services, Mining, and Miscellaneous[c]	170.7	164.2	+ 4.0
Government[c]	234.7	234.8	—
Average Hourly Earnings, All Manufacturing (in dollars)	$ 6.10	$ 5.50	+ 10.9
Initial Unemployment Claims Filed in South Carolina	26,711	40,019	- 33.3
Placements by South Carolina Employment Offices (nonagricultural)	14,724	6,925	+112.6
Indexes of Prices Received by Farmers (1966-68=100)			
All Farm Products	220	211	+ 4.3
All Crops	238	235	+ 1.3
Livestock and Products	215	194	+ 10.8
S.C. Parity Ratio	76	76	—
New Motor Vehicle Registrations			
Cars	8,166	7,927	+ 3.0
Trucks	2,427	2,370	+ 2.4

	June 1981	June 1980	First 6 Months		
			1981	1980	Percentage Change
Valuation of Building Permits Issued ($ millions)[d]					
Total for all S.C. Counties	$157.5	$155.1	$ 823.1	$ 857.0	- 4.0
Available County Data					
Aiken	3.0	2.9	17.5	11.6	+50.9
Berkeley	3.2	3.4	18.9	36.7	-48.5
Charleston	28.8	13.1	107.3	88.2	+21.7
Dorchester	2.1	2.6	15.2	16.6	- 8.4
Lexington	9.4	33.3	25.3	65.7	-61.5
Richland	7.0	9.3	62.4	58.4	+ 6.8
Greenville	13.2	12.5	86.0	91.0	- 5.5
Pickens	2.6	1.7	20.1	29.0	-30.7
Spartanburg	11.4	7.9	67.8	38.4	+76.6

[a] Less than one-half of 1 percent.

[b] Due to the termination of certain data series by the Federal Reserve Bank of Richmond, this series has been replaced by the Federal Home Loan Bank of Atlanta.

[c] Ibid., the South Carolina Employment Security Commission.

[d] Note: These amounts are now being reported in millions of dollars instead of thousands of dollars.

[e] NA: Not available.

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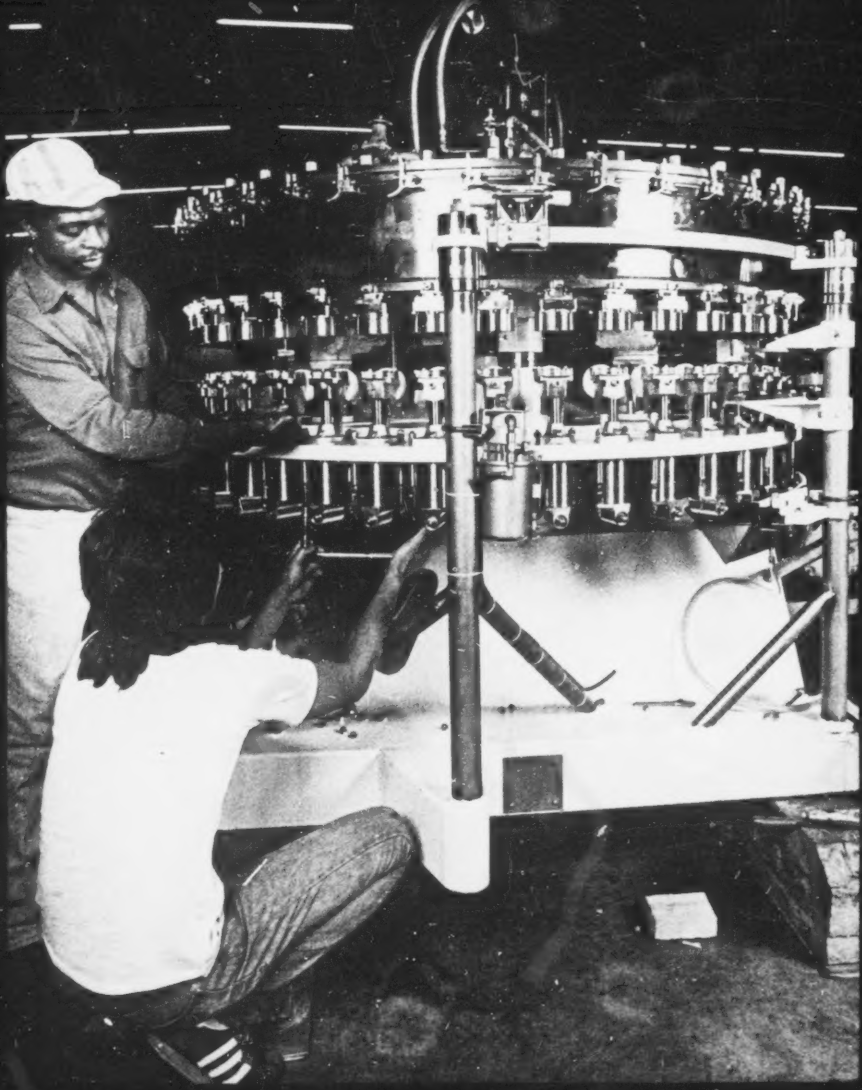

Volume XXVIII, Number 3
December 1981

"Our Turn"
by Dennis Boyle

"Restoring the Competitiveness of the United States"
by Edward L. Hennessey, Jr.

"Do Unions Raise Productivity?"
by John T. Addison

"The Employer and Employment Laws"
by James J. Baldwin

"Bottom Lines"
by James B. Edwards

"Revising South Carolina's Economic Indicators"
by Gary E. Crossley

"Right to Work Laws: The Recent Evidence of Their Economic Effects"
by Ralph D. Elliott

"Searching the Business Literature by Computer"
by Clark Holloway and Nolan R. Meadows

"The Management Bookshelf"
by Dwight Gardner

Statistical Indicators of South Carolina Business

Summary of Contents

3 In **Our Turn**, Dennis Boyle, Plant Manager at Meyer Charleston, talks about what his company is doing to raise productivity. Its philosophy of the team concept is obviously working because Meyer Charleston has earned a reputation for quality products, has reduced assembly line time 25 percent under the established standard, and has built enthusiasm and dedication into the work force.

7 **Restoring the Competitiveness of the United States.** Edward L. Hennessey, Jr., Chairman of the Board and Chief Executive Officer of Allied Corporation, gave graduating seniors at USC some excellent advice this August on how they could restore the competitiveness of the United States. His address is presented here.

10 Dr. John T. Addison, a member of USC's Economics faculty, asks the question, **Do Unions Raise Productivity?** He finds that one cannot conclude from the evidence that unions are good for productivity.

17 **The Employer and Employment Laws**, a regular feature by James J. Baldwin, Partner in the law firm of Haynesworth, Baldwin, Miles, Johnson, Greaves and Edwards. In this month's column, **NLRB Tightens Up Standards on Employer No Solicitation Rules**, Baldwin points out that the property rights of employers have been eroded by both court and NLRB decisions. He advises industry that unless the trend is reversed, it is likely to lose all of its property rights in favor of union organizational rights.

19 **Bottom Lines**, a regular feature by Dr. James B. Edwards, Professor of Accounting and expert consultant to Management. In his second offering this year, **Federal Tax Lines**, Dr. Edwards departs from his series of discussions of some of the more significant and/or latest known approved South Carolina tax laws to look at the business related highlights of the Economic Recovery Tax Act of 1981.

21 **Revising South Carolina's Economic Indicators. South Carolina Economic Indicators** is a monthly report issued jointly by The University of South Carolina (USC) and the South Carolina Employment Security Commission (ESC). In this article, Gary E. Crossley of the ESC, examines the process used to develop an updated set of economic indicator time series and the planned incorporation of these indicators into a revised publication format of **South Carolina Economic Indicators**.

29 Dr. Ralph D. Elliott, a certified Arbitrator for the State of South Carolina and a member of the Economics faculty of Clemson University, takes a hard look at **Right to Work Laws: The Recent Evidence of Their Economic Effects.** He states his belief that these laws are not so much antiunion as they are anticompulsion.

31 **Searching the Business Literature by Computer.** Here Prof's Clark Holloway and Nolan R. Meadows discuss the advantages and disadvantages of searching business literature by computer. They point out that this is a technique that can be used by any businessman and that a number of companies are already doing it.

39 **The Management Bookshelf**, a regular feature in which Dwight Gardner, USC BA's Business Librarian, reviews books of interest to business practitioners.

40 **Statistical Indicators of South Carolina Business.** A regular feature, listing the latest available data.

business and economic review

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This month's cover: Geo. J. Meyer Assemblers adjusting-tightening the left cylinders on a 40-valve (Filling Station) can filler destined for the Happiness Soft Drink Company, Shen-Zhen City, the People's Republic of China. This machine will be filling approximately 600 cans of soda per minute. See "Our Turn," page 3, this issue.

Our Turn

By Dennis Boyle

American industry has become infatuated with the "Japanese" method. Businesses of all sizes and types are sending their managers and supervisors to seminars showing the various aspects of "operating by consensus and committee." At business lunches and meetings, the new "buzz words," "theory Y," "theory Z," "quality circles," and "productivity" interlace conversations. I have seen managers armed with this knowledge rush back to their companies, preaching change. The results have been mixed. The problems ranged from an improper understanding of the theory to an unwillingness of workers and management to accept change.

When these concepts are properly understood and implemented, though, as practiced by both Japanese and European companies, they seek to improve quality and productivity through better communication and trust between the worker and management. By understanding the needs of your company and the needs of your employees, you can utilize these principles to improve quality, to increase productivity, and to enhance profitability.

Geo. J. Meyer Manufacturing is a 75-year-old company begun in Milwaukee, Wisconsin. At Geo. J. Meyer, we design, build, and install packaging machinery. Although the original equipment catered to the brewery and soft drink market, we have expanded into the nonbeverage market as well. Meyer has shipped 47,000+ machines. We began exporting equipment in 1905. About 70 percent of the bottling equipment now in operation worldwide was designed and built by Meyer. We have secured hundreds of major patents, and our manufacturing facilities have expanded to include five plants in the United States with overseas facilities in England, Brazil, and Mexico. Over 10 years ago, we became a part of A-T-O Incorporated, now Figgie International Incorporated. We have continually expanded our resources and capabilities in design, development, and growth.

Today, however, Meyer must address the same challenges as all other United States industry if we are to survive and grow. In addition to our present economy, with its inflation and high interest rates, we face a growing number of domestic and foreign competitors. It is very important that we have quality and productivity and that we understand the needs of our customers if we are to be competitive in the marketplace.

In 1977, Meyer did an analysis of the feasibility of relocating portions of its operations. High labor costs were, of course, a factor but it was also felt that we could streamline and improve our efficiency by decentralization. The beverage fillers and bottle cleaners assembled at our Milwaukee plant are the largest and most labor intensive of our products. Moving this activity to an assembly center was analyzed. There were problems to consider: customer acceptance of machinery built at a new facility, the training of a skilled assembly work force, the proper preparation of piece parts to prevent any shipping damage, and an increase in the complexity of the purchasing and expediting systems. Various locations in the "Sunbelt" were considered based upon the following: port facilities for overseas shipment, the logistics of overland freight, the number of trainable people available for employment, the quality of state-assisted training programs, average wages paid, tax incentives, and a location attractive enough to insure few relocation problems when hiring professionals. Charleston, South Carolina, was selected as best fulfilling these needs.

It is very important to understand that the methods used in the training, start up, and

Dennis Boyle is the Plant Manager at Meyer Charleston. He is a native of Milwaukee, Wisconsin, studied at U.C.L.A., and has worked in Europe and Japan.

operation of the Meyer Charleston Assembly Center were not laid out in a preconceived set of rigid guidelines. The success of Meyer Charleston is due to being flexible enough to do whatever worked and is the result of the input and support of many people, both inside and outside of Meyer. The Milwaukee plant continued to produce machinery while Charleston was starting up, which allowed us to develop without the added pressure of tight machinery delivery schedules.

Meyer and the state technical school worked very closely to develop a very comprehensive set of training manuals. These manuals covered everything from basic economics, math, blueprint reading, basic hand tools, safety, welding through our internal systems, and process sheets. Our original training programs were taught by TEC instructors and included physically working on some used machines we shipped to the college. This was the starting point of our "Team Concept."

Only two people were transferred from the Milwaukee plant. The remainder of the work force was to be hired locally. We could have created the same guidelines and methods of operation in Charleston that were used in Milwaukee. We didn't. Instead, we based our operation on the assumptions listed below, in which I believe very strongly.

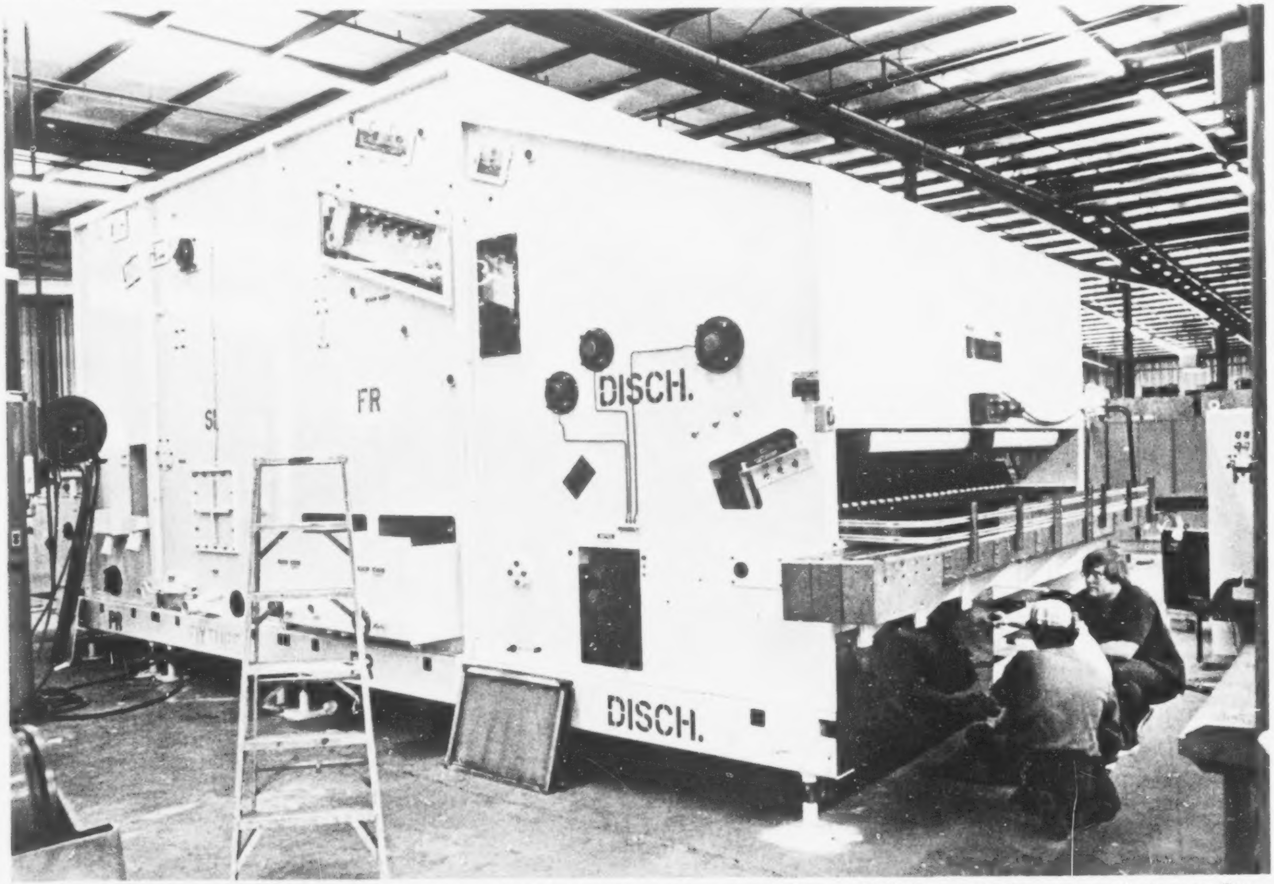
1. Everyone, given a choice, would prefer to work doing something he enjoys.

2. Enjoyable work is that which provides a challenge, a feeling of responsibility and accomplishment, a sense of pride, and a sense of actively participating in the direction a company takes.

3. It is natural for a person to enjoy a job more if it provides variety and flexibility and that person has an opportunity to develop more than one skill.

4. Work should be a constant learning experience. The people within the company who have the skills and knowledge can more effectively pass on that knowledge than seminars or books ever could.

5. People need to belong to something. A work group or company can provide that sense of belonging.



Part of the assembly team is installing the stainless cladding on the discharge end of a "30 Wide" "4 Soak Compartment" cleaner. This machine is used to clean and sterilize returnable bottles to allow re-use.

6. There is no facet of business operation that cannot be discussed or understood at any level within that business.

7. Trust between the employees and the company they work for is based on honesty and fairness.

8. Promotions and recognition should be based upon qualification, performance, and the ability to handle added responsibility — not how long you have been with the company. Wherever possible, promote internally.

9. When you feel you know all the answers and you have the best possible system, recognize you are wrong. When a company stops listening to its employees and starts dictating, it is putting itself out of business.

10. The United States produces the most competitive individuals in the world. There has never been a sport that interested us that we haven't dominated. We enjoy competing. There is no reason why a business cannot foster the same sense of competition in the marketplace.

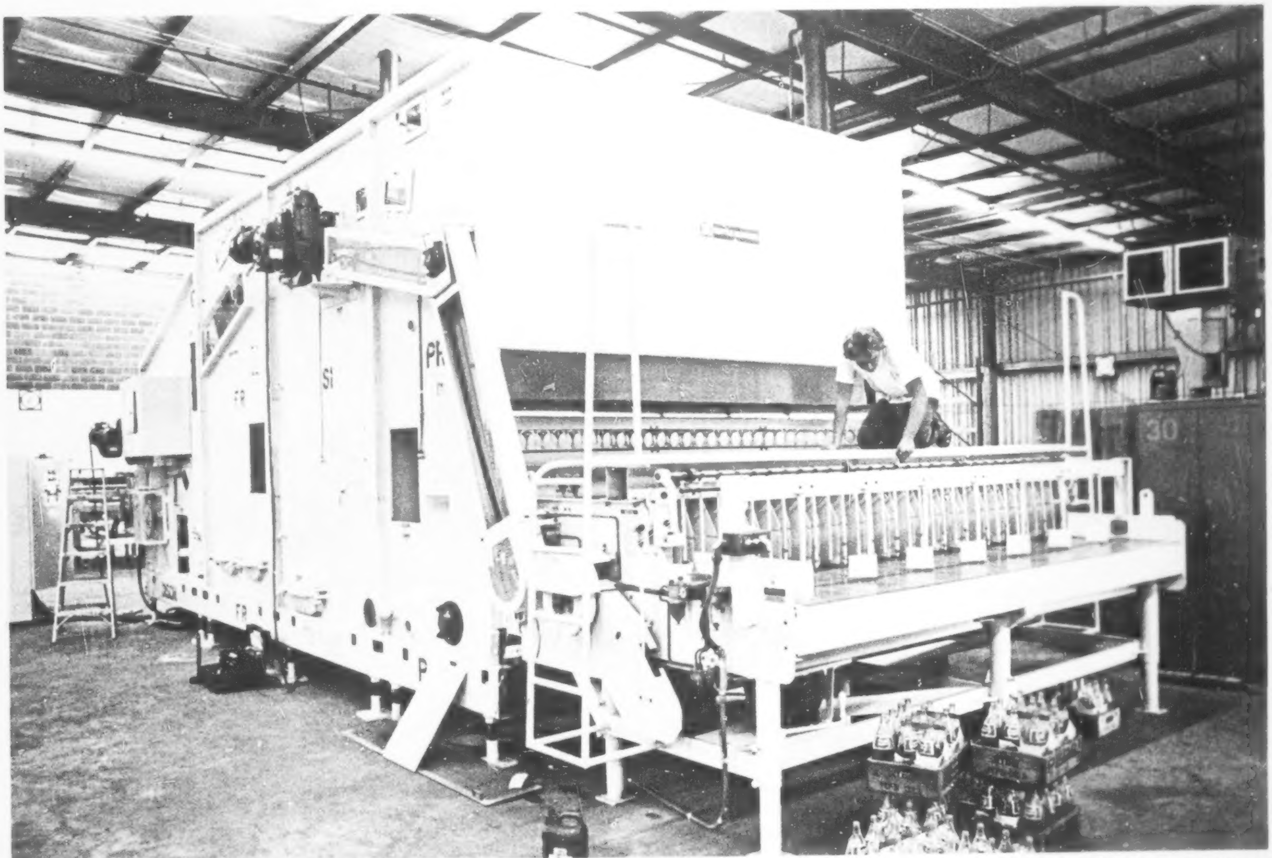
My definition of a team is a group of people working together to accomplish a goal. There are certain guidelines to which I believe you should adhere.

1. For maximum flexibility, communication, and performance, a team should never exceed 10 people. I have found 5 or 6 optimum.

2. A team should have a leader or spokesperson, determined by the company on the basis of ability, attitude, and responsibility. There must be an effective method for arriving at that choice with the qualifications understood by everyone affected. Actual testing of the individuals who apply can help verify the fairness of the results.

3. A team should be responsible for the training of its newer and less experienced members. This, of course, does not include cross-training or specialized training.

4. Recognition for excellent performance and identification of shortcomings or errors should be discussed with the entire team. Of course, recogni-



Another view of the "30 Wide" "4 Soak Compartment" cleaner, showing the infeed end. In operation, 30 bottles up to a litre in size will be loaded and discharged into the machine per cycle. This machine will be used to clean bottles at a rate of approximately 500 bottles per minute.

tion or corrective action of an individual should always be exercised when proper.

5. A team should always have attainable short- and long-range goals identified. They should be grading themselves and be graded accordingly.

6. Members of a team can and should be pulled to form temporary teams or "task forces" to address improvements.

There must be a line of communication between the head of the company and all levels, in both directions. The company has to be part of the team. You don't want a player's organization or union.

The above concepts were utilized without being formally stated in our training program. In fact, our training programs have dealt more and more with general attitudes, principles of operating, and basic knowledge requirements such as math, measuring instruments, and blueprint reading. It is interesting to note that the average high school graduate has little or no knowledge of economics, the free enterprise system, or why companies need profits and how those profits are used for expansion or growth. We start by teaching those basics. We stress flexibility and growth. We identify that everyone at the company is a supervisor. They start out by supervising themselves and as they develop, acquire skills, and are able to handle additional responsibility, they will be recognized for it. We were very selective in interviewing applicants for our training programs. It was found that it was more effective when Meyer personnel did the training than TEC instructors. Although the TEC instructors were excellent, I believe the trainees feel more confident that the course is preparing them properly when we are the instructors. It is also an excellent opportunity to evaluate the trainees' attitude and ability, and it gives Meyer a chance to prove their own expertise.

I feel our training program is a success. It has constantly improved and will continue to do so. We will reach a point where we can no longer bring aboard, within a reasonable time frame, the number of people required to hold a class. At that time, we will conduct an internal training program utilizing a larger number of people as instructors.

Our method of team operation in-plant can be best illustrated by our assembly teams. We utilize a team of six people to build a machine. Assembling one of our products requires: mechanical assembly, electrical assembly, pneumatic assembly, hydraulic assembly, and welding skills. The team is not composed of an electrician, welder, etc. All members of the team are trained in all skills necessary to assemble the machine. On each new machine they rotate and assemble different assemblies. This concept provides variety in their activity, the development of a multitude of skills, and an awareness of how the entire machines are built and function. It provides the company with extreme flexibility in scheduling. Vacations or someone's being sick ceases to become a factor.

This scheduling is done by the assembly foreman, but assembly is only a small portion of the team's involvement. Meyer Charleston is an assembly center. All individual piece part requirements are supplied by local vendors or by the Meyer Manufacturing Centers. We do not stock or supply spare parts at this facility. Parts are purchased only for our machine production requirements. Due to the delays created by receiving some parts with deviations, partial and late shipments, etc., we stage all incoming parts by part number in a "stock" area. Based upon the machine delivery schedule, the assembly team pulls these parts and separates them into the various assemblies. After reviewing the assemblies for any parts shortages and the effect that shortage will have on the chronological sequence of activity, expediting on any parts shortage is done by purchasing based upon scheduled assembly date.

While assembling the machine, the team utilizes a combination process and sign off sheet. This assembly process sheet includes: the identification of tooling and fixturing required, instructions on method and sequence of assembly, and all necessary quality assurance parameters. The assembler signs off on each of these steps and parameters identifying that it has been completed and/or checked. The assembly team is responsible for all testing and quality checks on the machines. When the machine has been assembled and tested, the assembly team breaks the machine down for shipping. They prep and package all loose parts, spare parts, and tools that are to be sent with the order. They build the boxes and skids required. After the machine is completed, the team makes recommendations as to possible improvements in any aspect of their responsibilities. They review and identify any corrections on prints or process sheets.

When language and logistics are not a problem, members of the team are sent to the customer's plant. We assist the Meyer Field Service Personnel in installation and start-up. We have realized excellent return on the expense involved. Not only do the assemblers see the machine they built in operation, but the significance of any problems relating to the assembly, testing, and packaging are driven home. Until exposed to it, one never realizes the difficulties of correcting machinery or dealing with parts shortages in the field. Our breakdown of the equipment for shipment, method of packaging, and testing procedures have been revised by this exposure. A complete report on the installation and start-up, identifying problems and recommending solutions, is written by the assembly team members upon their return. This is reviewed by the departments affected, with the corrections agreed upon implemented.

Meyer Charleston has been in operation for about three years. During that time we have

1. Established a reputation for quality in our products (customer acceptance of our products is excellent),
2. reduced our assembly time 25 percent under the established standard, and
3. seen the enthusiasm and dedication of the work force impact positively on the customers and Meyers personnel who have visited the Charleston facility.

Of course there is room for improvement. The key is to generate an acceptance of change in order to improve constantly as the natural way to operate. People will become complacent. One of the problems at Meyer Charleston arises from hiring everyone locally: these people have had no previous experience. They compare their performance and growth with that of each other. Unless there is someone they consider an expert involved, making suggestions and showing by example, their development suffers.

Utilizing the team concept as a management tool is a simple and effective way to improve the performance of an operation. People feel they are taking an active and important role in reaching predetermined goals. You will find the resistance to these concepts strongest in your Management and supervision. These leaders have to be exposed and converted into accepting these ideas and methods. It will not work unless you can be sure of their support. There is a subconscious admiration in United States industry for the tough decision maker, the autocrat, and the dictator. We must recognize that that type of manager is going the way of the dinosaur. People, not machines, will always be the key to quality and productivity.

Restoring the Competitiveness of the United States

By Edward L. Hennessey, Jr.

EDITOR'S NOTE: August 15, 1981, Edward L. Hennessey, Jr. delivered the Commencement Address at The University of South Carolina's system-wide graduation exercises. His remarks are reprinted below.

You may be interested to know that for the last five years Allied Corporation has recruited more new college graduates from The University of South Carolina than from any other institution. A good number of them are on the staff of our Columbia plant, which is celebrating its 20th anniversary this year — and which is managed by Rod Hull, who was made an honorary life member of the USC Alumni Association some time ago.

Most of you are starting out on a career — or soon will be. In many ways, I'm sorry to say, your timing is bad. America's economy is stagnant and threatening to slide into another recession. Astronomically high interest rates are cutting heavily into demand for housing and hard goods, and this is slowing industrial activity in many markets. The result is that good jobs may be hard for many young people to find.

Now, I admit that's a rather unsettling view. But I don't think the situation is hopeless. A great many dedicated people are joining in the effort to get our system working again as it should. Long-range, I believe the opportunities for this new generation of American students will be as boundless and exciting as they have been for mine.

Not all of you are looking for jobs in business, I know. But all of you — and your parents, as well — must be concerned with America's lagging economy — first, because it affects the material well-being of every one of us — and, second, because it's at the center of a major **political** change.

Change, perhaps, is not a strong enough word. Columnist Robert Novak told Allied managers two weeks ago that a **revolution** is under way in Washington.

The American people have installed — and are still supporting — an administration that aims to reverse the trend of the past 50 years toward more governmental controls, higher spending on social services, and higher taxation. Serious resistance to this long-term trend grew, in part, out of new social attitudes: a backlash, for example, against the doctrine of entitlements, which holds that the government owes everyone a living; a sense that we need to get back to our roots, to the source of our greatness.

But the new conservatism, I'm convinced, is also partly the result of the failure of the American economy to grow fast enough to support continually rising governmental expenditures without reducing spendable personal income. Most of us have supported the **goals** of most of the governmental social programs instituted over the years. We have risen up against the taxes needed to finance them only when we began to find ourselves poorer than the year before — in other words, when the growth in the output of our economy fell below the inflation level.

Edward L. Hennessey, Jr. is Chairman of the Board and Chief Executive Officer of Allied Corporation, a major diversified producer of chemicals, fibers and plastics, oil and gas, and electrical, industrial, and consumer products headquartered in Morristown, New Jersey. He earned a B.S. Degree in Business Administration at Fairleigh Dickinson University and attended New York University Law School. Before joining Allied Corporation in 1979 as a Member of the Board and President and Chief Executive Officer, Hennessey served in key executive positions with several major corporations. From 1956 to 1960, he was Group Controller of the Eastern Electronics Group of Lear Siegler, Inc., followed by 4 years with International Telephone and Telegraph Corporation, including 2 years as Controller with ITT Europe. After serving as Finance Director of Colgate-Palmolive Company's operations in Europe, the Middle East, and Africa from 1964 to 1965, Hennessey joined Heublein, Inc., as Vice-President for Finance; and in 1969 was promoted to Senior Vice-President for Administration and Finance. In 1972, he joined United Technologies Corporation as a Member of the Board of Directors and Senior Vice-President for Finance and Administration; and in 1977 became the corporation's Executive Vice-President, Group Vice-President of the Systems and Equipment Group, and Chief Financial Officer. Hennessey serves as a Director of numerous corporations and organizations, including the Federal Reserve Bank of New York, Automatic Data Processing, Inc., and the Travelers Insurance Company. He devotes considerable attention to educational, cultural, and civic activities, serving as a Trustee of Fairleigh Dickinson University, as a Member of the Board of Governors of the Corporate Fund for the John F. Kennedy Center for the Performing Arts, as a Director of the Coast Guard Academy Foundation, Inc., as President of the Tri-County (New Jersey) Scholarship Fund, and as a Trustee of Morristown Memorial Hospital. Hennessey also is a member of the Economic Club of New York and the Financial Executives Institute.

It's clear that America's economic machine badly needs an overhaul, even if we don't all agree on how it got so run down. Look at Department of Commerce statistics on United States productivity. Between 1948 and 1968, output per employee hour grew at a healthy annual rate of 3.2 percent. But then we went into a long slide. From 1973 through 1980, the increase averaged only .6 of 1 percent a year. And in the last three years output per employee hour has actually **declined** in the United States.

If those percentage figures don't sound very important, consider this: the Chase Manhattan Bank has calculated that if the United States had maintained a 3 percent productivity growth rate during the 1970's, the real output of the United States economy would have been $400 **billion** higher by 1979. And every American household would have had about $4,000 more in annual personal income.

While United States productivity has been dropping, the productivity of other industrialized nations has continued to grow at very respectable rates. Between 1970 and 1979, Japan, Germany, France, and Italy all had averaged growth rates between 4 and 5 percent.

In many products, the United States is no longer competitive, and we've lost world markets to foreign producers. In our own country entire industries — watches and audio equipment, for example — have practically disappeared, and others, like automobiles, have been badly crippled. Foreign companies now have almost 30 percent of the United States car market.

Unless we change course, we will probably become even **less** competitive in the years immediately ahead, because we're plowing a smaller part of our output back into new productive facilities. For many years now, capital investment as a percentage of gross national product has been lower in the United States than in any other industrialized country.

Let's face it. We've been letting our industrial plant run down. And over the years the United States has lost some of the advantage that helped our economy outperform those of other countries.

Innovation has declined in America, and we no longer have the clear technological edge we once enjoyed. Let me say parenthetically that at Allied we believe technological superiority is so essential to business success that we have doubled our spending on research and development in the last two years. And we'll keep on increasing it.

The United States once enjoyed a near monopoly on the kind of capital resources needed for really large-scale industrial development. With the post-war growth of Western Europe and Japan and the oil wealth accumulated in recent years by OPEC nations, this is no longer true. Our competitors have so much capital they are beginning to export the excess to the United States.

And the era of cheap United States energy, which gave our industry a significant advantage, has largely passed. Energy costs are still lower here than in most other industrialized countries, but the gap is narrowing.

Looking ahead, it's clear we're going to face even **stiffer** competition — not just from the presently industrialized nations but also from the developing states. Some of you parents will find it difficult to imagine — as I do — the astonishing progress of what we once knew as backward nations. Sophisticated electronic products are flooding the United States markets from Taiwan, Korea, and Thailand. Brazil is producing and exporting jet airplanes. And Saudi Arabia has built and put into production 1,000 factories in the short space of 10 years.

What all this means is that if we want to maintain anything like our present standard of living — and have any hope of improving it — we must get America's economic engine rolling again. This is a job in which everyone must help, not just people who work in business and industry. It's **everyone's** task because many of the decisions that must be made will be **public policy** decisions. Contrary to what many Americans still believe, we do not have a free enterprise system in the United States. It is a **competitive** enterprise system based on private ownership, but it isn't **free.** It is circumscribed in a thousand ways by government, to a point where no major business decision can be made by any large company without prior consideration of the rules and regulations of numerous federal and state agencies. Since these constraints on business freedom have been imposed by our political system, their modification or removal will be a **political** process, in which we must all take part.

There are many things that can be done to rejuvenate American business. The most important, I think, fall into three categories: first, measures to stimulate capital formation and investment; second, reforms to minimize governmental interference with the operation of free market forces; and, third, programs to improve the productivity of business. In all three categories, steps can be taken in both the private and public sectors to improve our economic situation, but governmental action is especially important in the first two. And, in fact, government **is** moving to stimulate capital formation and investment through the tax bill that was recently passed by Congress.

The need is for tax policies that encourage personal savings, permit adequate business profits, and encourage investment in new facilities and new technology. Funds for capital investment come mainly from savings and profits, and both have been much too low in recent years. America has the lowest rate of personal saving among all the industrialized nations. And, despite politically-inspired howls of protest over so-called obscene profits, it's a fact that corporate profits have declined substantially in recent years.

The new tax bill takes a number of steps in the right direction. By reducing individual income taxes, it should increase the potential for personal savings. In the corporate area, the bill allows faster depreciation of assets, reduces the windfall profits tax on new oil discoveries, and provides a credit for additional research and development spending. The effectiveness of these changes will depend on many things, especially our success in reducing inflation, but they represent at least an important beginning.

Regulatory reform is the second area we ought to address. We need to reduce the degree of interference by government in the operation of free-market forces. This doesn't mean **no** regulation. In today's highly complex and interdependent society, government has a legitimate role to play in many areas of our lives.

No responsible business leader I know is suggesting, for example, that government withdraw from the environmental arena. My own company — Allied — has a firm commitment to continued environmental improvement, and this year is spending more than $150 million to back it up. I know other major companies share this commitment.

What **is** sought by business leaders is an effective, continuing effort to **simplify** regulation — to make it goal-oriented and cost-effective — and thus to avoid stifling creativity and innovation. We have heard lip service given to regulatory reform, but we still need regulations that specify what must be accomplished, and leave it to business to figure out how to do it most efficiently and economically.

Improving productivity is a challenge with which many can help. Government measures encouraging capital investment will be a factor, of course, since new plants and processes are an important element in improved productivity. But business and labor share the largest responsibility.

We have to learn to motivate employees much more effectively than in the past — not to work **harder** but more **intelligently.** Managers must learn how to involve **all** of their employees in goal-setting and decision-making. We need imaginative new compensation systems. We have to create new corporate cultures, as we are trying to do at Allied — cultures in which employees, union leaders, and managers recognize that they are all on the same side: seeking to produce greater real wealth for all to share.

This is a big challenge. Changing what has been basically an adversarial relationship, to a cooperative one, will not be easy. But I think it can be done. To a large degree, the Japanese **are** doing it, although I'm not suggesting that what works in Japan will work in the United States. And the increasing level of education of the American worker should make this goal somewhat easier to achieve than in the past.

I am confident American business can be turned around. I don't buy the idea that the traditional American work ethic is dying or dead. I think American workers and American business are still capable of outproducing any other society, if we can only clear some of the roadblocks that prevent market forces from working. We need to make changes to encourage adequate capital investment and to minimize the interference of governmental regulations with sound business practices. And we need to get our productivity growing again, as it has in the past.

Those are the challenges facing our system as you young people start your careers. They are **your** challenges, too. Many of **you** will be intimately involved in our system's response to them. Some of **you** will help provide the strong new leadership the task requires. If we can get American business growing again, our economy will be able once more to support a comfortable level of the many social services our government has been providing — and still enable us to maintain the high standard of living we have grown used to since the end of World War II.

Do Unions Raise Productivity?

By John T. Addison

Until recently, the systematic study of unionism in economics has been an almost peripheral topic of inquiry. Indeed, as George Johnson[1] has noted, the percentage of articles in major United States economic journals dealing with unionism fell from 9.2 percent in the 1940's to 0.4 percent in the first four years of the 1970's.

Recently, a marked transformation has occurred in the economist's study of unionism. Perhaps nowhere is this more evident than in the area of the impact of trade unions on resource allocation, with the emergence of a substantial (empirical) literature on the effects of unionism on productivity. This development may even have supplanted interest in the relative wage effects of unionism, the dominant field of inquiry over the last decades.[2]

This emerging body of empirical literature is largely associated with what I have elsewhere termed the "Harvard School."[3] On the basis of this material it has been concluded that unions are in general, all other factors being the same, associated with higher productivity (or, crudely, "trade unions cause higher productivity").

In this article, I propose to assess the theoretical and empirical basis of the Harvard view of union reality. The commentary will be a critical one.

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[1] G. E. Johnson, "Economic Analysis of Trade Unionism," **American Economic Review, Papers and Proceedings** 65 (May 1975): 23-28.

[2] Note that relative wage effects and unionism's productivity impact may be related via the hedonic wage equation correction for labor quality.

[3] J. T. Addison, "Trade Unions and Restrictive Practices," in **The Economics of Labor Unions,** ed. J.-J. Rosa (Paris: Fondation pour la nouvelle Economie Politique, 1982).

THE "NEW" VIEW OF UNIONISM

At one level, the work of the Harvard School may simply be treated as an empirical exercise and evaluated accordingly. But it is clearly relevant to any empirical inquiry first to consider the theoretical content of the underlying model.

Theory

The essence of the new view is that unions have "two faces."[4] They do act in the characteristic manner of monopolists to raise prices (although we are not told of the goals of union leaderships), but they also provide workers with a "voice" at the workplace and, in so doing, affect positively the functioning of the economic system. In other words, their expression of collective voice may potentially more than offset the negative consequences of monopoly on the wages front.

The essence of this voice-theoretic approach is contained in a study by Freeman,[5] whose analysis draws heavily on Hirschman's exit-voice model.[6] In Freeman's labor market analog of the Hirschman product market case, quits are the expression of exit and unions are treated as the expression of collective voice. Freeman is concerned with contrasting the efficiency properties of the two mechanisms for transmitting to employers worker desires for conditions of employment, compensation packages, and rules of the workplace.

Freeman's starting point is the familiar internal labor market argument of Williamson, Wachter, and Harris[7] that, because of on the job skills specific to the firm and the costs of mobility and turnover, there are gains to be had from regular employment and hence a continuing relation between firms and much of their work force in which allocative and remunerative decisions are not directly controlled by the price mechanism. The contracts that result are complex and multidimensional, involving numerous issues other than wages. This is because workers care about nonpecuniary conditions of the workplace, and because different conditions, rules, and methods of organization have different costs. Further, because workers have some control over their own activities and can influence the productivity of others, particularly in "team" settings in which the monitoring of individuals is expensive, their attitudes or morale are potentially important inputs into the production process.

There is thus a "public goods" dimension to the workplace. First, there are shared working conditions, which imply restrictions on individual behavior or an imperfect matching of an individual worker's preference with plant policy. Second, the public goods potential of the workplace can also arise from the nonseparability of the effort input of each worker. In both instances there is a case for collective organization, although for the public goods aspect of the workplace to be relevant other conditions also have to be met.[8]

Freeman argues that the complex, multidimensional, and continuing nature of the employment relationship creates a substantial information problem in the labor market, his particular concern being to focus on the type of information about conditions and preferences conveyed by the exit and voice mechanisms referred to above. Taking

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[4] R.B. Freeman and J.L. Medoff, "The Two Faces of Unionism," **Public Interest** (Fall 1979): 69-93.

[5] R.B. Freeman, "Individual Mobility and Union Voice in the Labor Market," **American Economic Review, Papers and Proceedings** 66 (May 1976): 361-368.

[6] A.O. Hirschman, **Exit, Voice and Loyalty** (Cambridge, Mass.: Harvard University Press, 1970). See, also, J.T. Addison and J. Burton, "Wage Adjustment Processes: A Synthetic Treatment," **British Journal of Industrial Relations** 16 (July 1978): 208-223.

[7] O.E. Williamson, M.L. Wachter, and J.E. Harris, "Understanding the Employment Relation: The Analysis of Idiosyncratic Exchange," **Bell Journal of Economics** 6 (Autumn 1975): 250-278.

[8] Specifically, there must be substantial costs to using the market in the form of search costs for the firm in finding new workers and mobility costs for workers who quit, and the production unit needs to be subject to a number of imperfectly foreseen exogenous shocks that will require adjustments to meet efficiency conditions.

quits (exits) first, he argues that the amount of information to be inferred from quit data is small relative to the cost of processing that data. Thus inferences about the preferences of workers who quit may yield incorrect information due to selectivity bias. The wider the variation in tastes among workers, reflecting differences in preferences and position in the workplace, and the greater the different types of quit activity (separations, absenteeism, and partial withdrawal of labor time, etc.), the greater will be the difficulties of the inferential process. On the other hand, the direct solicitation of information from those who quit (i.e., exit interviews) runs into the problem of motivating the quitter to detail workplace problems. In short, labor quits contain a "high noise to signal ratio." The bottom line, however, is not whether individual mobility provides enough information to enable the employer to find the optimal labor contract but whether it outperforms the alternative information acquisition mechanism arising from collective voice.

Voice is seen as a collective institution because the communal nature of work conditions and rules that apply to all workers create a "public goods" problem in terms of preference relation and because of the need to police or monitor the long-term contractual arrangement. The advantages of collective voice over individual quits are taken to lie in the very different information that is conveyed about workers' preferences, namely, specific facts about areas of discontent and actual tradeoff possibilities. Perhaps more important is the role of voice as an institutional mechanism for innovation in labor contracts. Managerial attention and effort thus tend to be focused on labor issues on a regular basis.

Freeman argues that by providing a mode of expressing discontent beyond exiting, collective voice can be expected to reduce quits, absenteeism, etc. As a result, labor turnover and training costs will be reduced and firm-specific investments in human capital will be increased. Freeman himself notes that there **may** be efficiency gains because he accepts that unions unequivocally set wages above competitive levels. The offsets to monopoly gains are the benefits to management resulting from collective bargaining. Specifically, by providing information and a mechanism for potentially complex bargaining among workers and between workers and management that is more efficient than quits, collective bargaining is likely to yield a better mix among wages, working conditions, and rules of the workplace; a reduction in turnover costs; and increased firm specific capital, albeit at the cost of a higher wage. Bargaining among workers and potential worker demands for public or lumpy goods could offset the inefficiency losses that inevitably result from the switch from a marginal to a median criterion. Unions enable management to learn about, and improve the operation of, the workplace and the production process.

Collective voice, therefore, can improve managerial efficiency. Freeman nonetheless cautions that a negative response by management to collective bargaining or a negative response by unions to reorganization can have adverse consequences for the performance of the firm. The net outcome is thus an empirical question.

Empirical Evidence

Data supportive of a positive union productivity effect have been supplied in five recent studies. The findings are summarized in the following table. Only in the case of underground bituminous coal in 1975 is a negative union productivity effect reported.[9] Otherwise, positive coefficients on the unionism variable (discussed below) are recorded

TABLE. Selected Estimates of the Net Impact of Unionism on Productivity

Study	Estimated Change in Output per Worker Due to Unionism (Other Variables Being Held Constant
Wooden household furniture[a]	+15%
All 2-digit SIC manufacturing industries[b]	+20 to +24
Construction, all sectors[c]	+29 to +38
Cement[d, e]	+6 to +8
Underground bituminous[f] coal	
– 1965	+25 to +30
– 1975	-20 to -25

Sources: [a]See footnote 22, this article.

[b]See footnote 10, this article.

[c]Ibid.

[d]See footnote 12, this article.

[e]See footnote 9, this article.

[f]See footnote 13, this article.

Note: The values shown in the table are obtained directly from the production function, i.e., the coefficient on the unionism variable. If the coefficient reflects exclusively the greater efficiency of labor, the union productivity effect can be calculated by dividing the union coefficient by 1 minus the capital labor ratio coefficient.

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[9] Clark's study also yields negative values on the unionism (dummy) variable. K.B. Clark, "Unionization and Productivity: Micro-Econometric Evidence," **Quarterly Journal of Economics** 95 (December 1980): 613-639.

that in most cases exceed the relative (monopoly) wage effect of unionism. This implies that unionism reduces unit costs. However, it appears that the rate of return on capital is lower under unionism. While a higher rate of return to capital may not imply higher absolute profits, this finding does cast some doubt on the validity of the union productivity estimates reported in the table.

All the studies shown in the table employ a production function (typically Cobb-Douglas) to estimate the ratio of the marginal product of union to nonunion labor. The dependent variable in the production function is value or physical output per unit of labor and the standard independent variables are the capital-labor ratio, labor, and the presence/extent of unionism. A positive coefficient on the unionism variable provides **prima facie** evidence of a beneficial effect of unions on productivity. Here, two points have to be made. First, the capital-labor ratio which figures explicity in the production function controls has spurious productivity effects that result from an employer moving up his demand curve when faced with a positive union-nonunion differential. Second, employers can also respond to this wage differential by hiring better quality labor. This translates into a rightward shift of the labor demand curve which, unless controlled for in the statistical analysis, would upwardly bias unionism's productivity effect. Unlike the capital-labor ratio which figures explicitly in the production function, some estimate of labor quality has to be arrived at independently. The most common correction for labor quality is to weight the labor input by using an auxiliary human capital equation or earnings function. Labor "quality" is thus held constant by measuring labor so that workers with more schooling, etc., are weighted to represent more labor units — either directly in the standard production function (i.e., adjusting the labor input) or indirectly by adding the labor quality variable as a separate argument.

The first three studies shown in the table use value added per worker as the dependent variable, while the remainder use physical output per worker. The choice of dependent variable is largely dictated by data availability. The latter measure is preferred because the estimated unionism coefficient will merely identify a price effect if cost differences are fully reflected in output prices.[10]

All studies, with the exception of Clark's,[11] assume that union and nonunion sectors have identical production functions except for the productivity of labor parameter in the union sector. In Clark's study, relaxation of this assumption is said not to alter the basic results.

The studies differ in their selection of other standardizing variables. Clark, for example, introduces a supervision variable (the ratio of supervisory personnel to production workers) to control for the obvious fact that firms will respond to higher union relative wages by monitoring work effort more thoroughly.

Crucially, in the light of what follows, all of the studies, again with the exception of the cement study,[12] are cross-sectional in form, albeit in the case of the Freeman, Medoff, and Connerton study[13] cross-sectional at two points in time. The studies do not, therefore, trace the effects on productivity of, say, a change in union status and have limited bearing on the longer-term effects of unionism.

Interestingly, only one of the studies investigates a craft-oriented sector: namely, construction. The rest apply to industrial-type labor markets with presumably structured internal labor market characteristics, on which more will be said later.

Finally, though not reported in the table, only one of the studies[14] attempts to identify the mechanisms by which productivity is increased. Brown and Medoff report that unionized establishments have annual quit rates substantially lower than their nonunion counterparts even when the wage rate is held constant. Further, in entering quits as an independent variable in the production function it is found that the unionism coefficient is only reduced by one-fifth. The authors conclude that other factors such as better management, morale, motivation, and communication explain **(in some unmeasured way)** the remaining four-fifths. There is no control, however, for other factors that influence the propensity of the individual or group to quit.

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[10] Some controls for price effects are, of course, employed, e.g., region dummies in C. Crown and J.L. Medoff, "Trade Unions in the Production Process," **Journal of Political Economy** 86 (June 1978): 355-378; and S.G. Allen, **Unionized Construction Workers are More Productive** (Washington, D.C.: Center to Protect Workers' Rights, November 1979).

[11] Clark, "Unionization and Productivity."

[12] K.B. Clark, "The Impact of Unionization on Productivity: A Case Study," **Industrial and Labor Relations Review** 33 (July 1980): 451-469.

[13] R.B. Freeman, J.L. Medoff, and M.L. Connerton, "Industrial Relations and Productivity: A Study of the U.S. Bituminous Coal Industry" (in process).

[14] Brown and Medoff, "Trade Unions in the Production Process."

EVALUATION

Here we critically examine the theoretical status and empirical content of the new view of unionism. Concerning the former, perhaps the first observation to make is that the collective-voice model applies only to industrial-type labor markets. As Freeman himself admits, his treatment is a partial one and does not encompass craft groups who change jobs regularly.[15]

Second, even working with the partial model, it is notable that the idiosyncratic exchange literature on internal labor market structuring, on which Freeman draws heavily, does not **require** the presence of trade unions, particularly in small firms. Primary emphasis is laid elsewhere,[16] although the role of grievance procedure in arbitration and orderly contract renewal is also stressed. In this latter context we note that 30 percent of nonunion firms in the United States have formal grievance procedures, although the data do not permit us to establish the determinants of such structures. In a nutshell, collective voice is not synonymous with unionism. Even if it were, the "new-new" microeconomics model of Wachter and Williamson[17] recognizes degrees of task and job idiosyncracy and implicitly, therefore, varying requirements for unionism. The latter is, however, an all-or-nothing phenomenon.

Third, and related, firms have a wide capacity for adjustment to differing degrees of emphasis upon seniority. A system without seniority rules and consequently greater interfirm mobility would simply mean that, in equilibrium, workers would finance more of their own training. Equivalently, training would be less specific. In a system with seniority rules, specific investments will increase in relation to general ones and screening costs will also increase. Unionism intrudes on a natural (efficient contract) seniority system based on profit maximization. Even accepting the point made by Becker[18] that there is likely to be an underproduction of specific training in regular markets,[19] there is no guarantee that unions will magically eliminate the shortfall. In other words, there can clearly be an overinvestment in specific training as the result of unionization. Here, quits will be artificially reduced.

Fourth, we have to question the view of employers that the Harvard School asks us to buy. The firm is viewed as operating within its production possibility frontier prior to the advent of unionism — herein lies the scope for productivity improvement. Why, therefore, do not firms welcome the unionization of their labor forces? Also, the implicit asymmetry in management behavior is unconvincing in the absence of a formal elaboration of the theory of the firm, especially in light of recent work on efficient market contracting referred to above.

As Pencavel[20] has pointed out, the firm's response to the informational problems correctly identified by Freeman[21] which are present whether or not employees are organized into a union, involves a mix of incentives and penalties that take the form of combining aspects of various wage payment systems with the use of supervisors to monitor employee effort. The trade union may be seen as the employee's auditor of management or even the monitor of employees. The degree to which these monitoring activities achieve a close association between productivity and rewards will determine the efficiency of the organization. Given this interpretation of the nature of productive efficiency within the firm, it is, of course, not clear whether on balance the activities of trade unions will enhance or impair productivity. If they improve matters, however, one should presumably see more cases of firms actively encouraging the unionization of their workers. If this were the dominant response, unionized firms would outcompete their nonunionized counterparts.

Fifth, there is a simultaneity problem with the public goods argument. Although we shall argue that this is largely an empirical issue, simultaneity is an important consideration because the new view of unionism is empty as regards the determinants of unionism across the market. Unions simply exist in some firms (with associated productivity effects) but not in others. Not only is there no examination of the demand for union services (as the public goods dimension of the workplace might lead us to expect) but also no examination of the supply of union services.

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[15] Freeman, "Individual Mobility," p. 361.

[16] Namely, on the job evaluation process whereby wages attach to jobs, thereby forestalling individual bargaining, and internal promotion ladders that encourage a positive attitude toward on the job training and enable firms to reward cooperative behavior.

[17] M.L. Wachter and O.E. Williamson, "Obligational Markets and the Mechanics of Inflation," **Bell Journal of Economics** (Autumn 1978): 549-571.

[18] G.S. Becker, **Human Capital**, 2nd ed. (New York: National Bureau of Economic Research, 1975).

[19] Since workers cannot sign voluntary indenture contracts, investment in specific training is necessarily more risky than investment in physical capital.

[20] J.H. Pencavel, "The Distributional and Efficiency Effects of Trade Unions in Britain," **British Journal of Industrial Relations** 15 (July 1977): 137-156.

[21] Freeman, "Individual Mobility."

Sixth, one is simply presented with a "black box" of productivity enhancing mechanisms. Indeed, all we are told is that if management accepts unionization **and** the unions go along with the induced organizational changes, productivity will increase and, more important, implicitly go on increasing in response to upward movements in the union relative wage. We are not told of the mechanisms by which trade unions might **directly** enhance productivity, of the possible link between participation and productivity that industrial relations specialists might alert us to. Rather, we are presented with empirical regularities **prima facie** consistent with the familiar shock theory (and supplied with **ad hoc** industrial relations variables when a negative union effect is observed). Support for the collective-voice model comes from the alleged failure of other factors to explain the union effect.

This latter point leads us on to an examination of the empirical evidence. Let us first consider the various studies on their own terms, before noting some implications of the theoretical observations entered above.

The first point is that studies using value-added as the dependent variable[22] run into the difficulty noted earlier of compounding productivity with price effects. Crude attempts to control for the price effect reduce the magnitude of the unionism coefficient.[23] Interestingly, the two studies that employ physical output per worker as the dependent variable ratio (rather than value-added) do report individual negative union coefficients.

Second, the control for labor quality is clearly inadequate in highly aggregative studies,[24] and the same holds true for the coefficient on unionism in the earnings functions employed to standardize for labor quality.

Third, the mismeasurement of capital may also substantially increase the union coefficient in production function estimates. As Brown and Medoff themselves show, forcing the estimated coefficient on the capital/labor ratio to equal an upper bound of capital's share of value added critically reduces, while it does not eliminate, the magnitude of the union coefficient.

Fourth, the one study that deals with a craft-oriented trade and observes a substantial union productivity effect faces the most serious output measurement problems of all the studies because of the heterogeneity of construction output.[25] Here one might usefully refer to an earlier study by Mandelstamm,[26] again for construction, that avoids this problem by having union and nonunion contractors cost out an identical project. Mandelstamm, as I interpret him, attributes the greater efficiency of unionized firms to the rejection of workers who could not be paid the union rate. Having said that, it is only fair to point out that he detects no unfavorable intrafirm allocative aspects of union behavior associated with the craft rule book. It should also be noted that the share of construction industry output contributed by open shop contractors increased substantially over the decade of the 1970's — from 20 percent in 1970 to 60 percent in 1979.

Fifth, the various studies, with the exception of Clark,[27] fail to recognize that firms may differ in productivity because of inherent differences in the quality of management or other organizational effects that are difficult to control for in statistical analysis.[28] Unless controls for such firm effects are developed, the effects of unions on productivity cannot be identified — without assuming that the firm effects are independent of union status. Only Clark is able to attempt such a correction in cross section because of his parallel time series analysis.[29]

Sixth, there is a further problem of specification error in the estimation of the productivity parameter if production functions in the union and nonunion sectors are not identical as most studies assume. Brown and Medoff themselves show the ambiguities introduced by potential differences in technology. While Clark's results[30] suggest that his union productivity differential is basically unchanged irrespective of the technology constraint, his findings, even taken at their face value, clearly have no bearing on the other studies. In fact, although Clark's studies are the most sophisticated in their attempts to deal with specification error, his findings must themselves be regarded with some scepticism. In his cross section study,[11] for example, conclusions on the union productivity differential depend on just 29 observations for 9 nonunion plants. The bulk of his data relates to unionized plants: 436 observations over 119 union plants. The former data base is, in effect, "overworked." More formally, given the small number of observations and the size of standard errors in Clark's regression analysis, his findings must be treated with utmost caution. Moreover, his results include negative values (on unionism) which, in turn, cast considerable doubt on the one-tail test procedures employed in his other, time series study.[12]

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[22] J.R. Frantz, "The Impact of Trade Unions on Production in the Wooden Household Furniture Industry" (Senior Honors Thesis, Harvard University, March 1976); Brown and Medoff, "Trade Unions"; and Allen, **Unionized Construction Workers.**

[23] Allen, **Unionized Construction Workers.**

[24] Brown and Medoff, "Trade Unions."

[25] Allen, **Unionized Construction Workers.**

[26] A.B. Mandelstamm, "The Effects of Unions on Efficiency in the Residential Construction Industry: A Case Study," **Industrial and Labor Relations Review** 18 (July 1965): 503-521.

[27] Clark, "The Impact of Unionization" and "Unionization and Productivity."

[28] This is a problem only to the extent that there are systematic differences in the quality of management or organization.

[29] Clark, "The Impact of Unionization."

[30] Clark, "Unionization and Productivity."

Finally, briefly consider the empirical implications of the theoretical deficiencies of the collective voice model. One issue is the vexed problem of simultaneity. This has a number of dimensions. At one level there is the neglected point that the **level** of wages (**and** fringes) may, beyond some threshold value, lead to productivity declines and a fall in capital formation. At another level, the public goods argument, unionism may itself be a response to unfavorable working conditions. In other words, part of the union-nonunion wage differential may be a compensating differential for such conditions of work as a structured work setting, inflexiblity of hours, employer-set overtime, and a faster work pace. Interestingly, Duncan and Stafford[13] report that two-fifths of the quality-adjusted union-nonunion wage differential may be explained by such conditions. Unionism, then, may be viewed as an endogenous variable and as a passive instrument. Again, if workers with large investments in firm-specific capital are more prone to unionization, the coefficient on unionism in the production function will be an upwardly biased measure.

The final point to be made is the most crucial issue of all: if collective voice is not synonymous with unionism but is found in situations that provide a fertile institutional setting for unionism, there arises a fundamental specification problem. One should compare firms that are similar in their requirements for internal labor market structuring that is, firms of (initially) similar task and job idiosyncrasy. This possibility has obvious implications both for production function estimates and testing for the mechanisms by which unions "cause" increased productivity.

CONCLUSION

It is acknowledged that the new view of unionism held by the Harvard School offers a rich tapestry of empirical material. The introduction of a systematic study of the (net) nonwage induced consequences of unionism represents a major advance on a (largely industrial relations) literature hitherto characterized by anecdotal evidence and causal empiricism.

Judged as a theory of unions impact/behavior, however, the collective voice model must be regarded as a conspicuous failure. It largely fails to identify the mechanisms by which unions enhance or impair efficiency. Where an attempt **is** made to do so, via the analysis of quits, the procedure adopted is one of advancing support for the model from the failure of other factors to explain the union effect. The model then collapses to a simple shock theory of union impact, with no dynamic content.

A basic flaw in the theory is its treatment of unionism as synonymous with collective voice. Another fundamental difficulty stems from the treatment of unionism as an exogenous variable. Both assumptions are unrealistic and therefore call into question the interpretation of the empirical findings reported by proponents of the new view.

The bottom line is that our knowledge of what it is that unions do is not advanced by this literature. What is lacking is a choice-theoretic, rather than simply voice-theoretic, analysis of unionism. Freeman and Medoff refer to "two faces" of unionism.[14] There is, if you like, a "third face" — a political dimension — unexplored by the authors, analysis of which reinforces the choice-theoretic paradigm.

Finally, and related, although the empirical results surveyed earlier may contribute to a conclusion that the **static** allocated and X-inefficiency costs of unionism are probably quite small, the more important question is the longer-term effects of unionism on economic growth prospects and the process of economic evolution. The theoretical issues raised here are conspicuously ignored by the Harvard School, although other economists have been less reticient in this regard.[15]

In sum, one cannot conclude from the evidence (far less the theory) that unions are good for productivity. Moreover, productivity as measured is not the same as efficiency. We do not observe union cost reductions in unionized settings!

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[11] Ibid. Clark's model and its specifications are discussed in some detail in J.T. Addison and A.H. Barnett, "The Impact of Unionization on Productivity" and "Unionization and Productivity," The University of South Carolina, 1981. (Mimeographed)

[12] Clark, "The Impact of Unionization."

[13] G.J. Duncan and F.P. Stafford, "Do Union Members Receive Compensating Differentials?" **American Economic Review** 70 (June 1980): 355-371.

[14] Freemand and Medoff, "The Two Faces of Unionism."

[15] See, for example, M. Olson, "The Political Economy of Comparative Growth Rates," University of Maryland, 1978. (Mimeographed.)

The Employer and Employment Laws

By James J. Baldwin, LL.D.

The Employer and Employment Laws is a regular feature. Suggestions and inquiries by readers are invited.

NLRB TIGHTENS UP STANDARDS ON EMPLOYER NO SOLICITATION RULES

The property rights of employers have, for years, been whittled away by the courts and the National Labor Relations Board (Board). First, in the United States Supreme Court decision in **Babcock & Wilcox Co.,**[1] employers were told that their company property rights must give way to accommodate nonemployee union organizers when no alternative channels to communication with an employer's employees could be found. In addition, rights have been given to employees to engage in union activity at the expense of their employers' property rights. Under Section 7 of the National Labor Relations Act (Act), an employer is not permitted to interfere in an employee's attempts to form, join, or assist labor organizations. This prohibition has been interpreted universally to mean that an employer's property rights must give way to allow employees to distribute union literature and to solicit union membership on an employer's premises. Employees' rights to distribute literature and solicit union membership have always been subject to limits depending upon justified business considerations.

The Board has "presumed" that these considerations are justified when such distribution or solicitation has taken place during "working time" and in "work areas." The reasoning behind such a presumption was that such activity would interfere with work.[2] With regard to the distribution of literature, it would clutter the work area; with regard to solicitation of membership, it would interrupt the performance of job tasks.

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The Board, however, in a recent decision, has overruled the presumptive validity of an employer's rule prohibiting solicitation during "working time."[3] The Board held that such a rule, without further clarification, was presumptively invalid. The Board stated that the term "working time," without more, was sufficiently ambiguous to lead employees to believe that they were prohibited from soliciting during periods of the workday when they were not engaged in performing their work tasks. It might lead employees to believe, the Board said, that they were not permitted to solicit during break time and mealtime since both would fall within the broad spectrum of the term "working time." Such a prohibition, according to the Board, would unlawfully interfere with, and restrict employees in the exercise of, their Section 7 organizational rights. Since employees have the right to engage in organizational activities on company property during mealtime and break time, ambiguous rules that impinge upon these rights would tend to restrict and interfere unlawfully with the exercise by employees of their guaranteed Section 7 rights, and would be, therefore, invalid.

The Board did, however, lend some guidance for employers who had promulgated rules in reliance on the previous decision in **Essex International** (see footnote 2, this article). The Board stated that all an employer needs to do to clear up the ambiguity of a rule using the term "working time" is to incorporate into the rule itself

> [a] clear statement that the restriction on organizational activity contained in the rule

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[1] **NLRB v. Babcock & Wilcox Co.**, 351 U.S. 105 (1956).

[2] **Essex International, Inc.**, 211 NLRB 749 (1974).

[3] **T.R.W. Bearing Division of T.R.W., Inc.**, 257 NLRB No. 47, 107 LRRM 1481 (1981).

> does not apply during break periods and mealtimes, or other specified periods during the workday when employees are properly not engaged in performing their work tasks.[4]

In that way, the term "working time" would not be overly broad and would restrict employee solicitation only during times when it was justified due to interference with work.

The significance of this decision to employers is twofold. First, the maintenance of such an invalid rule can be grounds for an unfair labor practice charge filed by a union against an employer. The basis of such a charge would be that the rule unlawfully coerces and threatens employees in the exercise of their Section 7 rights and is therefore a violation of Section 8(a)(1) of the Act. Second, and more importantly, the mere existence of an invalid no-solicitation rule could be grounds for setting aside a representation election won by an employer. The basis for such a ruling would be that the mere existence of the rule upsets the "laboratory conditions"[5] necessary for a fair election to be held. The Board, in such a case, would not require that any showing be made that the rule was actually enforced. Its mere existence would be sufficient. In light of the decision in **T.R.W.** (see footnote 3, this article), employers will need to review the wording of their no-solicitation rules and determine whether any modifications are necessary.

The subject of off duty employees is another area in which the Board has continued to attack and cut back on employers' property rights. In an early case, the Board held that a company rule denying all off duty employees access to company property was presumptively valid where there was no showing that the union had no alternative means of communicating with employees.[6] The rule involved denied access to all off duty employees for all purposes and was enforced nondiscriminatorily. The Board, in essence, treated the off duty employees in the same manner as nonemployees had been treated under **Babcock & Wilcox Co.**

The rules pertaining to off duty employees have changed drastically since that 1973 case. In 1976, the Board established several criteria by which the validity of off duty employee rules should be judged.[7] The Board stated that such a rule

> [is] valid only if it (1) limits access solely with respect to the interior of the plant and other working areas; (2) is clearly disseminated to all employees; and (3) applies to off duty employees seeking access to the plant for any purpose and not just to those employees engaging in union activity. Finally, where justified by business reasons, a rule which denies off duty employees entry to parking lots, gates, and other outside working areas will be found invalid.[8]

This decision effectively cut down on the property rights of employers by allowing off duty employees access to certain areas of an employer's property at any time (i.e., parking lots, gates, other outside working areas), while apparently opening the door to the interior parts of a plant if the rule involved did not meet specific requirements.

The case of **Continental Bus System, Inc.**[9] is an example of how strictly the Board currently reads and applies the criteria first announced in **Tri-County** (see footnote 7, this article). In **Continental Bus,** an employer promulgated and enforced the following no-access rule:

> There will be no loitering around the terminal while off duty. There will be absolutely no loitering in the Express Office by anyone.

The Administrative Law Judge held that the rule, since it was nondiscriminatory, was presumptively valid absent a showing that no adequate alternative means of communication between employees was available. The Board disagreed with, and overruled, the Administrative Law Judge on the grounds that the rule was ambiguous. The Board, after citing the four-point criteria of **Tri-County,** found that Continental's rule did not **clearly** conform to those criteria and was, therefore, unlawful. Since the rule could convey to employees the idea that protected activity was being prohibited, it was unlawful. The Board held that unless Continental could show that there was some business justification for the rule, it was invalid and the mere promulgation of the rule, even absent enforcement, was a violation of Section 8(a)(1) of the Act.

As can be seen through the above cases and discussion, the Board has, in the past few years, seemingly ignored the property interests of employers in order to guarantee employees the right to engage in union organizational activities. Unless this trend is reversed in the near future, the Board may continue to require employers to forfeit more of their property rights in favor of employees and their union organizational rights.

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[4] Id. at 1482.

[5] **General Shoe Corporation,** 77 NLRB 124 (1948).

[6] **G.T.E. Lenkurt, Inc.,** 204 NLRB 921 (1973).

[7] **Tri-County Medical Center, Inc.,** 222 NLRB 1089 (1976).

[8] Id. at 1089.

[9] **Continental Bus System, Inc.,** 229 NLRB 1262 (1977).

Bottom Lines

By James B. Edwards, Ph.D., C.P.A., C.M.A., C.I.A., C.D.P.

Bottom Lines is a regular feature that brings attention to practical business taxes and accounting. Suggestions and inquiries by readers are invited.

FEDERAL TAX LINES

Given the significance of the New Federal Tax Law, the current edition of this column is devoted to some business related highlights of the Economic Recovery Tax Act of 1981. Some of the changes are effective immediately and some are retroactive. While most will take effect in tax years beginning in 1982, some provisions won't be fully in effect until 1986 or 1987. A brief summary is presented, followed by a checklist of those that may be important to 1981 year-end tax planning strategies. Obviously, this presentation is not exhaustive, so you should check with your tax advisor for more details before taking any action.

LINE ONE

A Quick Rundown on Some of the More Important Business Tax Incentives

1. A new Accelerated Cost Recovery System (ACRS) completely replaces the current depreciation system by assigning all property to one of four classes.

   - **3-year** — autos, light trucks, research and development equipment, and other assets with an existing ADR midpoint of four or fewer years.
   - **5-year** — most other machinery and equipment, furniture and fixtures, single-purpose agricultural structures, and petroleum storage facilities.
   - **10-year** — public utility property with an ADR midpoint of 18-25 years, railroad tank cars, and certain types of real estate.
   - **15-year** — public utility property with an ADR midpoint life exceeding 25 years and all other depreciable real estate.

Under ACRS, the law allows depreciation deductions to be taken pursuant to a table prescribed by the Treasury that incorporates the declining balance method, with a switch to straight line at the optimum point. No salvage value is taken into account. In general, ACRS applies to property placed in service after December 31, 1980, and the class life system (ADR) is repealed at that point. There are options for longer recovery periods, as well as certain prohibitions, restrictions, recapture rules, and other considerations.

2. The Investment Tax Credit (ITC) has been expanded to allow a 6 percent credit for 3-year class property. A 10 percent credit is allowed for 5-, 10-, and 15-year class property. The 10 percent ITC for rehabilitation of qualified nonresidential buildings has been replaced with new credits, classifications, and special rules. Other changes include the used property limitation, recapture rules, unused carry-overs, and a special "at risk" provision. These changes generally are effective for property placed in service after December 31, 1980.

Dr. James B. Edwards, C.P.A., C.M.A., C.I.A., C.D.P., and Professor of Accounting in the College of Business Administration at The University of South Carolina, earned his B.B.A., M.B.A., and Ph.D. Degrees in Accounting at the University of Georgia. A specialist in A.I.C.P.A. tax courses, Dr. Edwards has organized and taught a number of professional development programs for the National Association of Accountants, including the first C.M.A. review course in the United States. The winner of 6 national writing awards, he is the author of numerous articles and papers for leading journals and professional organizations, and is a popular public speaker and a very active member/officer of the American Institute of Certified Public Accountants, the American Accounting Association, the National Association of Accountants, the Planning Executives Institute, and the American Management Association, among others.

3. The Net Operating Loss (NOL) carry-over period is extended to 15 years from 7 years for losses incurred in years ended after December 31, 1975.

4. A "safe harbor" rule for distinguishing between a sale and a lease for certain leased property that permits the lessor to recover costs and take the investment tax credit has been enacted. There are special requirements to be met.

5. The 60-month amortization election for historic structures has been eliminated.

6. A new Incremental Credit for Qualified Research Expenses (R&D) is provided, equal to 25 percent of "qualified research expenses" in excess of the average amount of such expenses in a "base" period. Qualified expenses are generally those made after June 30, 1981, and before January 1, 1986, that qualify for an "expensing" election under current law. However, there are some exceptions and restrictions.

7. A charitable contribution of scientific property used for research is allowed equal to the cost basis of specified property plus 50 percent of the unrealized appreciation, limited to twice the cost basis of the property. There are some tight restrictions to consider, such as that the property must have been constructed by the taxpayer.

8. There is a reenactment of qualified stock options similar to the "old rules" with some few changes, such as the required holding period, premature dispositions, exercise periods, and limitations on value of grant to any employee in any calendar year.

9. For years beginning after 1983, certain "large" corporations or related groups will be required to make higher estimated tax payments.

10. The Corporate Charitable Contribution Deduction is raised from 5 percent to 10 percent of taxable income before deducting the contributions.

11. The Corporate Tax Rate on the first $50,000 has been reduced by 1 percent for taxable years beginning in 1982, and by an additional 1 percent for years beginning in 1983 and later.

12. The Personal Holding Company Tax is reduced from 70 percent to 50 percent.

13. The Accumulated Earnings Credit is increased from $150,000 to $250,000, except for certain service corporations.

14. The maximum allowable number of shareholders of a Subchapter S Corporation is increased from 15 to 25. Certain "grantor" trusts may now be shareholders in a Subchapter S Corporation.

15. Small businesses with no more than $2,000,000 of average annual gross receipts for the 3-year period ending with the current taxable year may elect a single-value LIFO pool for any trade on business. Restoration of writedowns in beginning inventory upon election of LIFO may be made ratably over a 3-year period beginning with the first LIFO year. Approved published governmental indexes may be used in order to simplify LIFO calculators.

16. The Targeted Jobs Tax Credit has been extended and modified. It will continue to be available with respect to targeted employees beginning work before January 1, 1983. AFDC recipients and WIN registrants are added as targeted groups, while the WIN tax credit has been eliminated as a separate credit. The 30 percent "first-year wages limit" is eliminated.

LINE TWO

Some Tax Strategy Considerations for 1981 Year-End

1. If you have filed a tax return for a fiscal year ending in 1981 and have placed in service property qualifying for ACRS, you should file an amended return. You may earn some interest on the tax refund accrued from the due date, or date filed, whichever is later.

2. Review your expenses carefully to ensure that you are properly classifying R&D expenses to take advantage of the available tax benefits beginning July 1, 1981.

3. Review job classifications to determine eligibility for Jobs Tax Credit.

4. Cash basis taxpayers may defer income by not billing customers or clients until next year, when the corporate tax rates will be lower.

5. Expenses paid by a credit card are deductible in the year when charged. Get the deductions this year and pay next year. Since

corporate tax rates will be lower next year, you have shifted some deductions back against higher tax rates.

6. Delay sale of a piece of property until next year.
7. Consider your bonus plan so you can get the deduction this year.
8. Accelerate your bad debt deductions.
9. If you are not using LIFO, you can switch when you timely file your tax return. Consider year-end purchase decisions in light of the LIFO effects on taxable income. This is an excellent opportunity for flexibility in tax planning.

BEYOND THE BOTTOM LINE

These are but a few of the important federal tax considerations of which you should be aware. You should contact your tax advisor before year-end so that you will not miss out on any appropriate strategies.

* * *

Much more to come in the future . . . some practical matters will be explored in depth . . . others will merely be identified . . . please share your ideas, questions, answers, etc. — just send them to Dr. James B. Edwards, College of Business Administration, The University of South Carolina, Columbia, South Carolina 29208.

Revising South Carolina's Economic Indicators

By Gary E. Crossley[1]

Background

South Carolina Economic Indicators is a monthly report that aids in the analysis of movements in the South Carolina economy. The publication is a joint effort of the Division of Research of the College of Business Administration at The University of South Carolina, and the Research and Analysis Section of the South Carolina Employment Security Commission. **South Carolina Economic Indicators** has been issued monthly since December 1965.

South Carolina Economic Indicators provides historical data in both graphical and tabular form for 19 different measures of the performance of the South Carolina economy. These measures, or indicators, are listed in Table 1. Each indicator is classified as either a "Generally Leading Indicator," a "Generally Coincident Indicator," or an "Other Significant Indicator." Generally leading indicators, of which there are eight, are those that will usually display a change in trend before a similar change takes place in the economy. For example, a downturn in the economy would be preceded by a downturn in a generally leading indicator. There are seven Generally Coincident Indicators and these generally change concurrently with changes in the overall economy. The Other Significant Indicators are those that do not fit into the Generally Leading or Generally Coincident categories; there are four of these. The

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[1] The process of revising the format of the **South Carolina Economic Indicators** publication was not an individual effort. The University of South Carolina's College of Business Administration, Division of Research, and the South Carolina Employment Security Commission's Research and Analysis Section worked jointly on the project. The author would especially like to express his appreciation to Dr. Richard W. Ellson, USC Research Economist, who reviewed this article and was very involved in the decision-making process of the revision. A special note of thanks also goes to the National Bureau of Economic Research (cyclical timing program), the U.S. Department of Commerce (composite index program), the Bureau of Labor Statistics (seasonal adjustment program), USC BA's and the Employment Security Commission's computer centers, and Douglas Potter and Joe Ward of the Employment Security Commission for compilation, production, and analysis of time series.

TABLE 1. Currently Used South Carolina Economic Indicators

Generally Leading Indicators	Comments And Limitations
Average Manufacturing Workweek	Change in industry (SIC) coding from 1967 to 1972 manual
Initial Claims for Unemployment Insurance (Weekly Average)	UI program coverage changes in 1972 and 1978
Nonfarm Job Openings Unfilled	Affected by changes in Job Service procedures
Nonfarm Job Placements	Affected by changes in Job Service placement emphasis
Total Unemployment Rate	Methodology change in 1970 from place of work to residence
Ratio of Average Weeks Claimed to Insured Employment	UI program coverage changes in 1972 and 1978, also workload measure
Unemployment Insurance Benefits	Impact of UI program changes and inflation
New Business Incorporations	Count of businesses requesting chargers
Generally Coincident Indicators	**Comments and Limitations**
Total Employment	Methodology change in 1970 from place of work to residence
Nonfarm Wage and Salary Employment	Change in industry (SIC) coding from 1967 to 1972 manual
Textile and Related Employment	Change in industry (SIC) coding from 1967 to 1972 manual
Durables Manufacturing Employment	Change in industry (SIC) coding from 1967 to 1972 manual
Average Weekly Manhours in Manufacturing Establishments	Change in industry (SIC) coding from 1967 to 1972 manual
Total Deposits in Member Banks	Discontinued Series
Estimated Retail Sales	Inflation Bias
Other Significant Indicators	**Comments and Limitations**
New Car Registrations	Trucks and motorcycles are excluded
Residential Construction Permits ($)	High sampling variability and inflation bias
Nonresidential Construction Permits ($)	Large sampling variability and inflation bias
Industrial and Commercial Electric Power Sales	Reporting lag and commercial power only

major purpose of the indicators is to provide helpful information to those who must plan for the future on the basis of expectations about future economic activity.

With the passage of time, there are advances and changes in the state's economy. In light of this, it is necessary to review periodically the relevance of the indicators being used. The most recent review was a joint research effort conducted over the last year and a half by the South Carolina Employment Security Commission (ESC) and The University of South Carolina (USC). This article will examine the process used to develop an updated set of economic indicator time series and the planned incorporation of these indicators into a revised publication format of **South Carolina Economic Indicators.**

INITIAL EFFORTS

One of the first steps taken was a review of the 19 indicators currently used. Each of these indicators was defined in terms of historical series available, series classification, economic direction, and other items that describe the indicator (see example in Table 2). This provided a good foundation for further work on refining the indicators. Table 1 describes some of the most significant limitations.

The next step was to compare the cyclical trends of the current indicators with recent business cycles and determine whether the series was appropriately classified Generally Leading, Generally Coincident, or Other Significant. This part of the revision process required work with the cyclical timing computer programs of the National Bureau of Economic Research (NBER), as well as an intensive study of South Carolina's economic cycles.

The James C. Self Management Science Center in USC's College of Business Administration produced several printouts using economic time series run through the NBER cyclical turning points determination program. An example of this output for Initial Claims for Unemployment Insurance (Weekly Average) is shown in Table 3.

NEW INDICATORS OF ECONOMIC ACTIVITY

During the next phase of this study, work was concentrated on the examination of possible new economic indicators for use in **South Carolina Economic Indicators.** Table 4 lists time series collected from a variety of sources evaluated for their applicability to the state's economy.

REVIEW AND DECISION PROCESS

The following procedures were used for each existing indicator and possible new series:

TABLE 2. South Carolina Economic Indicator Summary

SERIES TITLE: Initial Claims for Unemployment Insurance (Weekly Average)

DATA SOURCE: S.C. Employment Security Commission

ORIGIN AND TRAITS OF DATA SERIES: An initial claim is a notice of unemployment filed by a claimant which is a request for a determination of eligibility for unemployment compensation. These operational counts only reflect applications for benefits under the Regular State Unemployment Insurance (UI) program or the first 26 weeks of possible benefits. Unemployed individuals covered by Railroad UI, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Civilian Employees programs are excluded. Transitional claims, claims that set up new benefit years for claimants who are in a continuous claim series at the end of their expiring benefit years, are not included.

This series reflects a weekly average which is computed by dividing the total monthly number of initial claims for new or additional spells of unemployment by the number of weeks in that month.

DATA VARIANCES: Changes in coverage in 1978 and 1972.

TYPE OF DATA: Raw Numbers.

HISTORICAL TIME SERIES: January 1960 up to current month.

ECONOMIC DIRECTION: A downward movement denotes an improvement in economic conditions.

SERIES CLASSIFICATION: Generally leading indicator.

MCD RATING:* 3.

METHOD OF SEASONAL ADJUSTMENT: X-11 ARIMA, Multiplicative Type.

AVAILABILITY DATE: Usually around the 10th of the month after the reference month, i.e., January data ready by February 10.

CONTACT(S): Employment Security — Unemployment Insurance and/or Research Units.

OTHER AREAS: State, SMSA, and Local Office Only.

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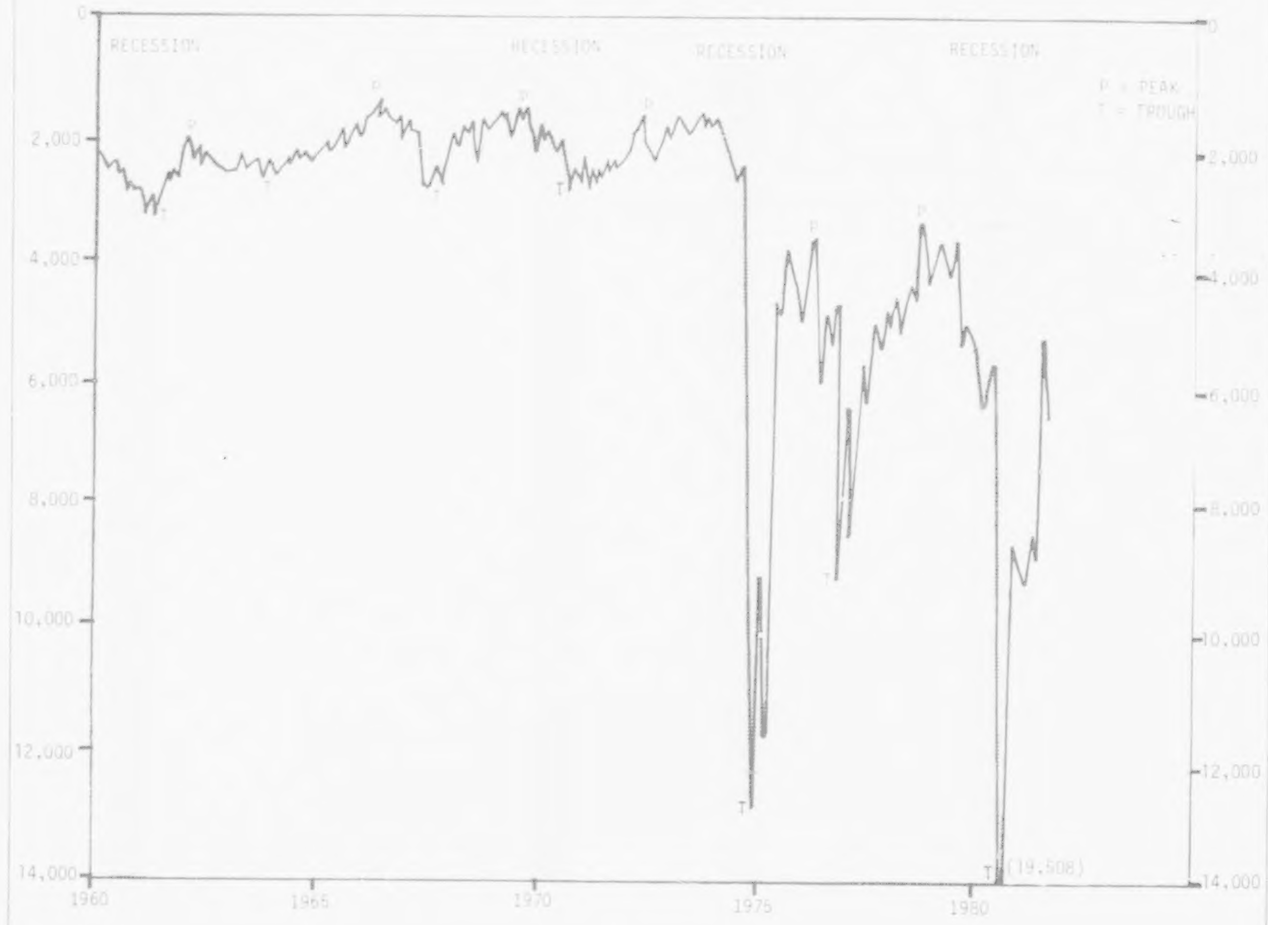
*Months for Cyclical Dominance (MCD) is an estimate of the appropriate span over which to observe cyclical movements in a monthly series. The more erratic a series is, the larger the MCD will be; thus MCD is 1 for the smoothest series and 6 for the most erratic.

TABLE 3. Cyclical Turning Point Output

Using the NBER cyclical analysis program, the following turning points (peaks, troughs) were defined for Initial Claims for Unemployment Insurance (Weekly Average):

Year and Month	Trough	Peak
1961 April	3,426	
1962 January		1,990
1963 September	2,650	
1966 March		1,396
1967 June	3,122	
1969 June		1,420
1970 September	3,152	
1972 November		1,429
1974 December	12,186	
1976 February		3,668
1976 December	8,947	
1978 September		3,332
1980 July	19,508	



1. a review and analysis of seasonally adjusted data graphs;
2. an evaluation of series in terms of statistical adequacy — reporting time frame, revisions, error measures, comparability over time, and length of historical series;
3. an analysis of the timing of turning points in relation to business cycle peaks and troughs; and
4. an evaluation of the conformity of series with national business cycles.

The review and graphical analysis of seasonally adjusted data for each existing and potential indicator proved to be useful in determining both the long- and short-term trends of the series. For example, the Unemployment Insurance Benefits data reflected a long-term upward movement in the 1970's created by the effects of inflation on wages and benefit amounts.

Several important areas were reviewed in order to judge the statistical adequacy of the series. The reporting time frame criteria consisted of the series time period covered (monthly, quarterly) and the availability date for the series (time lag between reference date of data to release date). The reporting lag for both Personal Income and Electric Power Sales was deemed excessively long to meet deadlines of providing timely economic analysis.

The frequency and magnitude of revisions were also items of concern in this evaluation process. Some series, such as Total Employment adjusted by the monthly Current Population Survey, are naturally subject to larger than usual, and more frequent, modifications.

Error measures varied from indicator to indicator. The concept studies here was the error estimate (if available) for the sampled or reported data. Generally, the highest error rates occurred in small sample data such as Total Employment/Construction Permits and the lowest errors appeared in administrative data (such as Nonfarm Job Openings Unfilled).

Comparability over time and length of historical series were looked at jointly because of their similarity. It is important that a time series have a long enough time span to measure its performance during various business cycles. The series must also be consistent and comparable over the time period, i.e., no major changes of definition or sampling.

By analyzing the timing of the turning points for each indicator in regard to the business cycle, conclusions were inferred about the cyclical sensitivity of each series. Industrial and Commercial Electric Power Sales was one series that exhibited few cycle turning points as a result of the necessity of electricity and the inflationary impact of energy costs.

As a final check, the indicators were evaluated for their conformity with national business cycles. The turning point peaks and troughs were compared with the existing national recession entry/exit and expansion starts/stops. Table 5 provides an example of this process for a particular series, Initial Claims for Unemployment Insurance (Weekly Average).

TABLE 4. Possible New Economic Indicators

Residential Construction Dwelling Units
Residential Construction Permits (Deflated by Building Cost Index)
Nonresidential Building Square Footage
Nonresidential Construction Permits (Deflated by Building Cost Index)
Job Service New Applications Filed
Total Nonfarm Job Openings Received
Total New Vehicle Registrations
Personal Income
Unemployment Insurance Benefits (Adjusted for Inflation)
Unemployment Insurance Final Payments
Total Unemployment
Layoff Rates in Manufacturing, Durable, and Nondurable Goods (3 Series)
Accession Rate in Manufacturing
New Hire Rate in Manufacturing
Quit Rate in Manufacturing
Separation Rate in Manufacturing
Goods Producing (Mining, Manufacturing, and Construction) Employment
Service Providing Employment
Total Manufacturing Employment
Textile Manufacturing Workweek
Manufacturing and Textile Manhour Indices (2 Series)
Real Spendable Earnings in Manufacturing
Diffusion Employment Index
Marginal Employment Adjustments Index
Index of Leading Economic Indicators
Index of Coincident Economic Indicators

TABLE 5. South Carolina Economic Indicators Compared to the National Recessions

Initial Claims for Unemployment Insurance (Weekly Average)*

Time Period	NBER Recession (R)	Total Months in Cycle	Months of Available Data	High Value (Month)	Low Value (Month)	Changes from Positive		Previous Month Negative	
						#	%	#	%
April 1960-February 1961	R	11	11	3315 (Feb. '61)	2361 (Apr. '60)	7	64%	4	36%
March 1961-November 1969		105	105	3426 (Apr. '61)	1396 (Mar. '66)	54	51	51	49
December 1969-November 1970	R	12	12	3152 (Sept. '70)	2035 (Dec. '69)	7	58	5	42
December 1970-October 1973		35	35	2844 (Jan. '71)	1429 (Nov. '72)	15	43	20	57
November 1973-March 1975	R	17	17	12185 (Dec. '74)	1791 (Nov. '73)	13	77	4	23
April 1975-December 1979		57	57	8901 (Dec. '76)	3565 (Sept. '78)	24	42	33	58
January 1980-July 1980	R	7	7	20022 (Jul. '80)	5775 (Feb. '80)	6	86	1	14
August 1980-August 1981		13	13	11149 (Sept. '80)	5485 (Aug. '81)	4	31	9	69

*This is an inverted series, i.e., high values and positive changes from the previous month indicate worsening economic signs.

Part of the review process also consisted of answering the following six questions suggested for assessing and selecting new indicators in the article "Cyclical Indicators: An Evaluation and The format used in Table 5 was produced for each economic indicator and was helpful in the evaluation process.

New Leading Indexes" published in the **Handbook of Cyclical Indicators.**[2]

1. Economic significance — how important is the role in business cycles of the variable represented by the data?
2. Statistical adequacy — how well does the series measure the economic variable in question?
3. Timing — how consistently has the series led or coincided at the business cycle turns (revivals and recessions)?
4. Conformity — how regularly have the movements in the specific indicator reflected the expansions and contractions in the economy at large (historical business cycles)?
5. Smoothness — how promptly can a cyclical turn in the series be distinguished from directional change associated with shorter, irregular movements?
6. Timeliness — how promptly are the statistics available and how frequently are they reported?

The final results of this review and evaluation process are shown in Table 6. The "Comments" column explains briefly the action taken on each series.

Of the eight original Generally Leading Economic Indicators, Nonfarm Job Placements and Unemployment Insurance Benefits were deleted. Layoff Rate in Manufacturing and the Number of Residential Construction Dwelling Units were added. Of the seven original Generally Coincident Economic Indicators, Total Employment, Durables Manufacturing Employment, and Total Deposits in Member Banks were deleted. Nonresidential Construction (square footage), Real Spendable Earnings, and the Accession (new hires and rehires) Rate in Manufacturing were added. New Car Registrations was switched from an Other Indicator to a Coincident Indicator. Retail Sales was adjusted for inflation by using a deflator of the Consumer Price Index, less Housing. The original Other Significant Economic Indicator section (consisting of Value of Residential and Nonresidential Construction Permits and Industrial and Commercial Electric Power Sales) was deleted.

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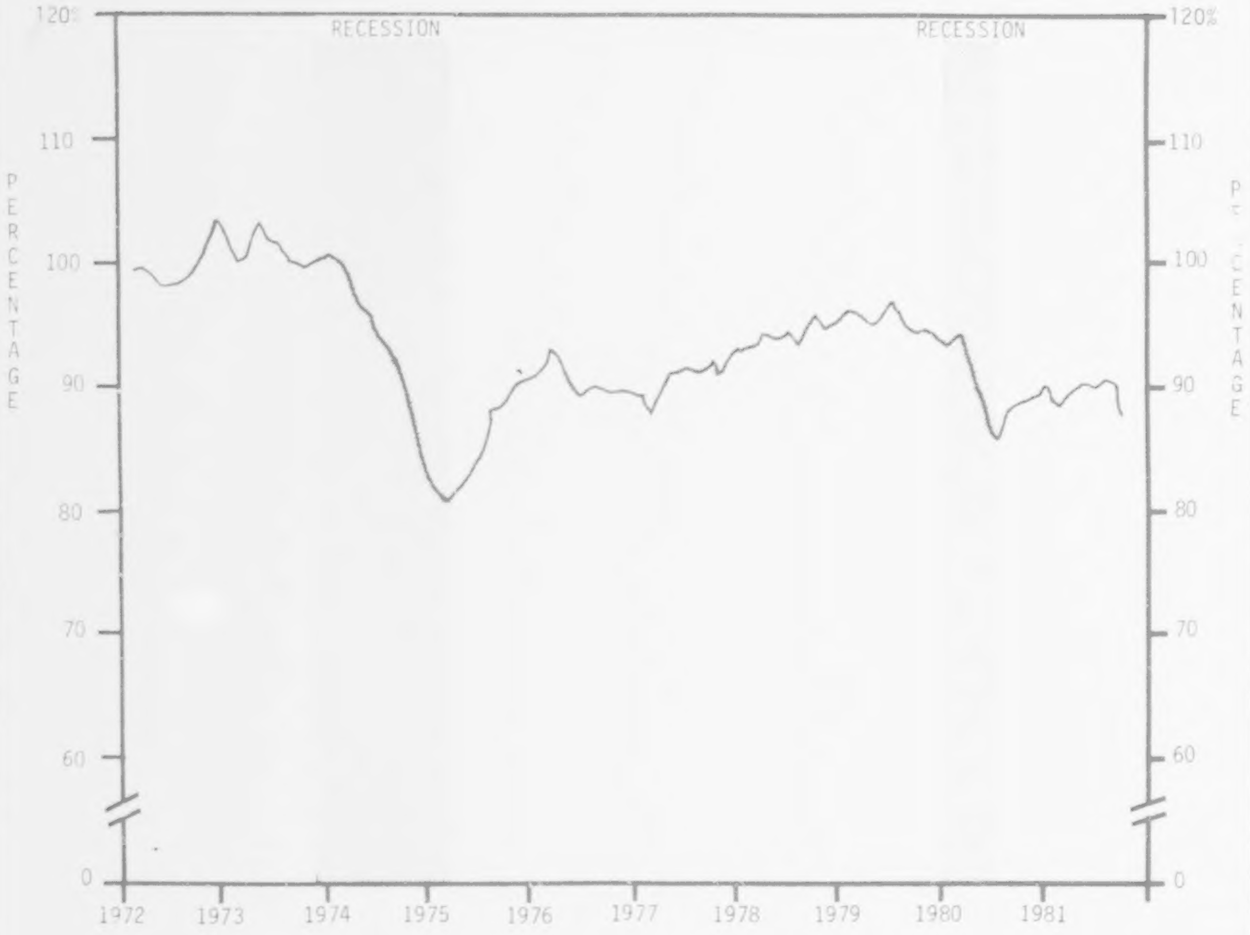
[2] U. S., Department of Commerce, Bureau of Economic Analysis (May 1977)

GRAPH. Composite Index* of Leading Economic Indicators for South Carolina, January 1972-August 1981 (Base Year = 1972 = 100)



*Index Components: Average Manufacturing Workweek (1.2); Initial Claims for Unemployment Insurance (Weekly Average) (1.2); Nonfarm Job Openings Unfilled (0.8); New Business Incorporations (1.2); Residential Construction (Number of Dwelling Units) (0.8); Layoff Rate in Manufacturing (1.2); Total Unemployment Rate (0.8); and Ratio of Average Weeks Claimed to Insured Employment (0.8) — weights are shown in parentheses.

COMPOSITE INDICES OF ECONOMIC ACTIVITY

The final step taken was to construct several new indicators by combining common series using composite indexing. A composite index is a single time series that reflects the aggregate performance of a group of time series, each of which may differ in unit of measurement, amplitude of variation, and level.

For the revised **South Carolina Economic Indicators,** three composite indices have been developed. The composite indices of Generally Leading and Generally Coincident Economic Indicators have been constructed with the respective series listed in Table 6. The third composite index, Marginal Employment Adjustments Index, is comprised of the following: Average Manufacturing Workweek, Accession Rate in Manufacturing, Layoff Rate in Manufacturing, and Initial Claims for Unemployment Insurance.

Because they use series of historically tested usefulness and consistent timing characteristics with diversified economic coverage and a minimum of duplication, composite indices give more reliable signals over time than do many of the individual indicators. Further, many of the individual series measurement errors are smoothed out in the index as a whole.

The Composite Index of Leading Economic Indicators for South Carolina is displayed in the graph below for January 1972 to September 1981. As the graph indicates, this composite index does a good job of foreshadowing South Carolina's economic performance. Prior to the November 1973-March 1975 NBER defined recession, the leading composite index began a steady downturn in May 1973; and in advance of the January-July 1980 recession, a drop in the leading composite index occurred initially in July 1979. Probably, four months of decline in the index of generally leading indicators that started in March 1976 can be attributed to the natural gas shortage/oil embargo.

It is hoped that these new indices will foster a better understanding of South Carolina's economy and offer additional insight into the relationships between the state and national economies. It should be realized, however, that when such indices are used for forecasting business conditions, the assumption is implied that they will retain their anticipatory qualities beyond the sample period. Therefore, each new recession or recovery will test afresh the hypothesis inherent in the composite index.

TABLE 6. Revised South Carolina Economic Indicators

Generally Leading Indicators	Comments
Average Manufacturing Workweek	No change
Initial Claims for Unemployment Insurance	No change
Nonfarm Job Openings Unfilled	No change
Total Unemployment Rate	No change
Ratio of Average Weeks Claimed to Insured Employment	No change
New Business Incorporations	No change
Layoff Rate in Manufacturing	New series
Residential Construction (Number of Dwelling Units)	New series
Generally Coincident Indicators	**Comments**
Nonfarm Wage & Salary Employment	No change
Textile & Related Employment	No change
Average Weekly Manhours in Manufacturing Establishments	No change
Retail Sales Deflated by Consumer Price Index	Adjusted for inflation
New Car Registrations	Moved from other to Coincident Indicator
Nonresidential Construction (Square Footage)	New series
Real Spendable Earnings	New series
Accession Rate in Manufacturing	New series
Deleted Indicators	**Comments**
Nonfarm Job Placements	Influenced by ES Program
Unemployment Insurance Benefits	Impact of UI Program changes and inflation
Total Employment	CPS Averaging Bias
Durables Manufacturing Employment	Too many Coincident Indicators
Total Deposits in Member Banks	Discontinued series
Industrial and Commercial Electric Power Sales	Time lag and behavior not cyclical
Value of Residential and Nonresidential Construction Permits	High sampling error

CONCLUSIONS

In summary, the choice of the principal composite leading and coincident indicators was guided by, and consistent with, general economic considerations and logical decisions. This process of selecting and evaluating the individual indicators was based largely on empirical screening and judgment scoring procedures applied according to specific criteria to selected collections of monthly time series. The changes made in revising South Carolina's economic indicators were based on the premise of providing a more meaningful, balanced profile of the state's economy.

This groundwork, hopefully, will lead to further research on examining South Carolina's economy through statistical analysis of the variety of barometers of economic activity. The joint work of

The University of South Carolina and the South Carolina Employment Security Commission in profiling the state's economy is a bench mark for further work in this area.

The revised format, time series, and new composite economic indicators will first be published in the March issue of **South Carolina Economic Indicators.** Comments and/or questions on the above work are welcomed and can be addressed to either Gary Crossley, ESC - 758-8983, or Dr. Richard Ellson, USC - 777-2510. Anyone wishing to be put on the mailing list to receive the **South Carolina Economic Indicators** should write to:

Dr. Richard W. Ellson
Division of Research
College of Business Administration
The University of South Carolina
Columbia, S.C. 29208

Right to Work Laws: The Recent Evidence on Their Economic Effects

By Ralph D. Elliott

Right to Work (RTW) laws prohibit mandatory union membership as a condition for continuous employment in private sector organizations. Under Section 14b of the 1947 Taft-Hartley Act, individual states are allowed to pass RTW laws, and 20 states in the South and West have chosen to do so. The effects of these laws on union activity, wages, union membership, and union decertification are subjects of continuing controversy. Recent research evidence, however, indicates that the RTW controversy is more symbolic than substantive.

In a general sense, Right to Work laws relate to the concept of union security. A union is established in an organization when it has received the secret ballot support of a majority of the eligible workers. Once a union has been certified by the National Labor Relations Board as the representative or bargaining agent for the workers, the union officials try to make the organization both viable and secure. To do so, the union officials may try to obtain a union shop clause when they negotiate a contract with management. Under the union shop arrangement, the employer is free to hire anyone he chooses, but once hired, the employee is pressured to join the union and support the activities of the union, or, at a minimum, pay dues to remain employed.

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Right to Work laws outlaw the union shop. They require an "open shop," where an employee cannot be required to pay union dues to keep his job, or be pressured to become a union member. By the same token, a union member in an open shop can discontinue his membership and stop paying dues without having to quit his job.

Union officials oppose such open shop arrangements for a variety of reasons. They argue that everyone in an organization or bargaining unit benefits from the contract the union negotiates for the workers. Since, under an open shop arrangement, unions cannot require all workers to support the union and pay dues, some workers will not reveal their preferences for union services and will obtain benefits for which they do not have to pay. They receive a "free ride" at the expense of their fellow workers. For example, nonmembers receive the same wages and fringe benefits negotiated by the union for the rank and file. Also, unions are required to give nonmembers the same kind of representation service as members, even to the point of presenting grievances at arbitration.

Union officials also note that the open shop status creates an atmosphere of hostility, not only between the employer and the employees but also among employees. In an open shop environment, the union is constantly faced with the risk of losing membership and dues since workers can choose to drop out of the union. Therefore, the union must devote much of its energy to winning and maintaining employee affiliation.

The union may maintain employee affiliation by picturing the employer as antiworker, by trying to negotiate higher and higher wages, and by grieving about trivial matters. Also, the union may somehow subtly discriminate between nonmembers and members when providing service to justify the cost of being a member. The unequal treatment tends to create ill feelings within an organization's labor force.

On the other side, proponents of Right to Work laws maintain that workers should have the freedom to work in unionized organizations without being required to join a union. Moreover, they contend that the higher rate of return to unionization, which occurs in the absence of Right to Work laws, is artificial because many workers may be forced to pay dues for union services they don't want. In effect, laws that permit or mandate union security may "tax" workers who do not wish to join the union. Those wishing not to join the union become "forced riders."

Right to Work laws also may strengthen management's bargaining position with the union. In an open shop environment, the union is kept busy holding its membership together, weakening its position to press fresh demands on the employer. Also, since not all workers are paying dues, the union's financial strength will be less, limiting the union's ability to finance a strike or hire high-priced negotiators. Likewise, by not having all workers as union members, the union may be less willing to call a strike since all workers may not hit the bricks and honor the picket line.

To some extent, these pro and con arguments tend to balance or cancel each other. So — can anything definite be said about the actual effect of Right to Work laws on union-management relations? Several recent publications provide answers to some of the questions implied above.

One question relates to the impact of RTW laws on union organizing activity. After accounting for other explanatory variables, Elliott found that RTW laws have no significant impact on union organizing activities.[1] The measures of union organizing activities were (1) petitions filed for representative elections, (2) elections held, (3) elections won, and (4) votes cast for unions.

Another question relates to the impact of RTW laws on union membership. In their studies, Moore and Newman[2] as well as Lumsden and Petersen[3] found that RTW laws do not significantly affect union membership once other explanatory variables that influence union membership have been taken into account.

As mentioned above, unions are expected to be more antagonistic toward the employer in RTW states in order to attract and hold employee support and dues. One possible implication of this assertion is that wage rates will be higher in RTW states than in non-RTW states because of the union's desire to produce dramatic results to influence bargaining unit employees. Another implication is that strike activity will be higher in RTW states as unionized employees try to convince other employees of the union's willingness to fight for improved terms and conditions of employment. On the other hand, the fact that not all covered employees are dues payers may reduce the union's bargaining power such that wages will be lowered in RTW states. Still another interpretation is that RTW laws are adopted in states having low wages such that the direction of causation is reversed from that usually expected, i.e., RTW's don't cause lower wage rates but lower wage rate states adopt RTW laws.

Using a simultaneous equation framework, Wessels[4] determined that RTW laws are insignificant in terms of their impact on wages, union membership, or strikes. In fact, he found that RTW laws have a **significant** and **positive** effect on job satisfaction, particularly for nonunion workers.

Finally, another question for consideration relates to the impact of RTW laws on union decertification activity. Elliott and Hawkins[5] let total decertification petitions filed per million union members in each state be a function of several variables including the presence or absence of RTW laws. The results indicate that RTW laws do not significantly affect decertification activity.

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[1] Ralph D. Elliott, "Do Right to Work Laws Have an Impact on Union Organizing Activities?" **The Journal of Social and Political Studies** 4 (Spring 1979).

[2] William J. Moore and Robert J. Newman, "On the Prospects for American Trade Union Growth: A Cross-Section Analysis," **Review of Economics and Statistics** 57 (November 1975).

[3] Keith Lumsden and Craig Petersen, "The Effect of Right to Work Laws on Unionization in the United States," **Journal of Political Economy** (December 1975).

[4] Walter J. Wessels, "Economic Effects of Right to Work Laws," **Journal of Labor Research** 2 (Spring 1981).

Overall, then, it would seem that unions are not as strong in RTW states, not because of the RTW laws but because of popular attitudes toward unions which produce both union weaknesses and RTW laws. Repealing RTW laws, then, would not produce any great change in the strength of unions. However, repeal **would** reduce job satisfaction for nonunion workers.

RTW laws, therefore, don't seem to be so much antiunion as they are anticompulsion. In essence, RTW laws do nothing more than safeguard the citizen's right to accept and/or retain a job regardless of his decision on whether or not to support a labor organization.

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[5] Ralph D. Elliott and Ben Hawkins, "Do State Right to Work Laws Affect Union Decertification Activity?" **Atlantic Economic Journal** 9 (July 1981).

Searching the Business Literature by Computer

By Clark Holloway and Nolan R. Meadows[1]

INTRODUCTION

Comments on computerized literature searching in the recent press have two implications: (1) that the system is practical and beginning to be used, and (2) that it is still new and not yet a completely ordinary process. With the ability of computers to search quickly through large data banks, scholars are learning about sources of information they'd never heard of a few years ago, and librarians are getting requests for publications they didn't know existed.[2] A background in electronics or business is now of as much use to the librarian as a knowledge of English literature.[3] One author discusses the use of computerized information services in the specialized field of commercial intelligence.[4]

One of the first steps in any research project, whether it be in business or a university, is to determine what has already been done. The traditional task of conducting a manual literature review is both time consuming and expensive. Commercial data bases are now available that enable business literature searching by computer, with attendant reductions in cost and time, and

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Nolan R. Meadows is a doctoral student in the College of Business Administration at the University of Kentucky. He earned a B.S. Degree in Accounting at Kentucky and a Master's Degree in Management at Pepperdine University. Meadows has served as a Management Instructor in the College of Business Administration at The University of South Carolina, and is currently a member of the business faculty of Eastern Kentucky University.

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[1] The authors should like to thank W. Michael Havener and Jane Thesing of the Thomas Cooper Library of the University of South Carolina for advice and consultation and for conducting various trial searches.

[2] Paul Ingrassia, "Need an Old Article on Silicate Concrete?" **Wall Street Journal**, 10 November 1980.

[3] Dottie Ashley, "Librarians Increasingly Shelve Books for Computers," **The Columbia Record**, 10 November 1980.

[4] Robert Hershey, "Commercial Intelligence on a Shoestring," **Harvard Business Review** (September 1980): 22.

retention of, even improvement in, the accuracy of manual searching. It is perhaps surprising that, particularly among engineering executives and educators, more use is not made of this method of investigation.

This technique can be used by any businessman, as outlined below in Operational Details. Indeed, many progressive concerns such as Chem-Nuclear Systems, Inc., Milliken Research Institute, Inc. are already involved in computerized literature searching.

SEARCHING TECHNIQUE

The optimum search strategy is one that will retrieve all of the articles in which the researcher may be interested and none of the extraneous articles in which he isn't interested. Techniques for searching data bases have been available for some time.[2] However, since each data base is organized somewhat differently, no one search strategy is advocated here. Rather, several techniques are discussed.

For each paper in the computer-readable file we find the following sections:

Article title

Author(s)

Journal name, volume, date, and page number

Descriptors (i.e., index terms or key words)

Abstract

In general, the file will not contain the full paper. The computer can be instructed to search in any of these sections (or in any combination of them). Thus, we could retrieve all articles, for example, whose titles contain the word "planning," written by Smith and Brown, which appeared in the **Harvard Business Review.**

The principles of Boolean algebra, using the AND, OR, and NOT operators, as described by Cattley and Holloway,[3] are useful in structuring a literature search. Briefly, we may require each retrieved article to contain all members of a group of words (the AND operator: "strategic" and "planning" and "Esso"), or any one of a group of words (the OR operator: "corporate" or "division" or "department"), or none of a group of words (the NOT operator: not "Mobil" or "Gulf" or "Texaco"). Combinations of the AND, OR, and NOT operators obviously are required.

We must be precise in addressing the computer — the possibility of alternate spellings of names or words must be recognized. If, for example, the computer is asked for LONG RANGE, it will not retrieve LONG-RANGE or LONGRANGE. Most systems have the capability of retrieving all words containing a common root. Thus, a request for STRATEG* would recover STRATEGY, STRATEGIC, and all other words beginning with STRATEG. Care must be taken that the root is long enough to exclude unwanted words. For example, STRAT* would retrieve unwanted words like STRATIFY.

A trial and error procedure is useful. If only the word "planning" were specified, the computer would tell us that the number of "hits" (i.e., relevant articles) was in the tens of thousands. The concepts underlying Boolean logic can then be applied to narrow the results of the search. After we arrive at what we feel is a satisfactory number of articles, we can call for the abstracts to be printed by the computer. Figure 1 illustrates the results of a search in the ABI INFORM data base

FIGURE 1. Example of a Computerized Literature Search Using the ABI/INFORM Data Base

Search Problem: Retrieve references to articles and papers on long-range planning in the petroleum industry. References to Mobil Oil Company are to be excluded.

Search Words	Number of "Hits"
1 PLANNING and LONG and RANGE	550
2 PLANNING and STRATEGIC	347
3 PLANNING and [(LONG and RANGE) or STRATEGIC]	829
4 PETROLEUM	1,510
5 PETROLEUM and PLANNING and [(LONG and RANGE) or STRATEGIC]	9
6 MOBIL	100
7 PETROLEUM and PLANNING and [(LONG and RANGE) or STRATEGIC] but not MOBIL	9

Options:

a. Enter search words and receive number of "hits."

b. When number of "hits" is satisfactory, print titles, on-line or off-line.*

c. When number of "hits" is satisfactory, print full records, including abstract, on-line or off-line.

d. If number of "hits" is not satisfactory, restructure strategy and enter new search.

*Off-line printing is done at the computer location and mailed to the user.

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[2] See J.M. Cattley and C. Holloway, "An Information Retrieval Technique," **Petro/Chem Engineer** (December 1965): 35.

[3] Ibid.

utilizing such Boolean operators. By following the trial and error procedure and the concepts of Boolean algebra, we are able to reject a large number of articles that do not meet our requirements, and find nine articles that almost certainly will be of interest.

The most important step in the process is the development of a search strategy that will produce articles directly related to the research topic. An ineffective search strategy will result not only in numerous articles unrelated to the topic, but also in increased cost for the search. The search analyst must identify various data bases that include information in the areas of interest. From this group, he can select one or two data bases for the actual search.

ADVANTAGES

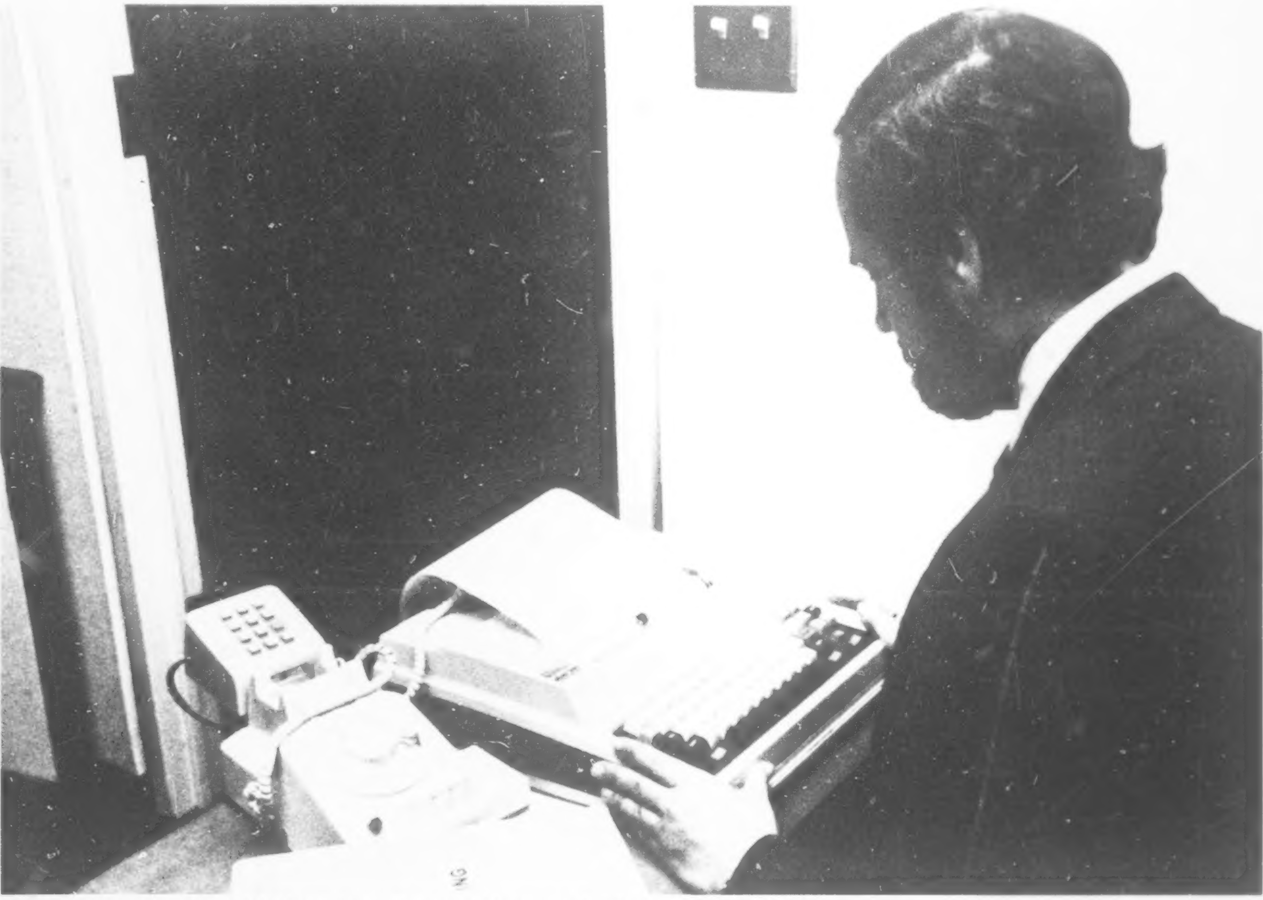
There are at least five major advantages to on-line computer-based bibliographic searching. First, it allows the researcher, through the use of a terminal and printer, to direct the machine to search through hundreds of thousands of abstracted articles and pull out only those needed. Second, it makes possible the rapid retrieval of abstracted articles from large bibliographic files.

Third, unlike manual searching, in a computer search if the results obtained are not satisfactory, the search strategy can be modified and new results obtained immediately. Fourth, the specific nature of the search is more carefully defined and receives a more thorough analysis, in preparation for the on-line search, than it would for most manual searches.

Finally, the end result is a bibliography tailored to the needs of the researcher, including not only titles but abstracts as well. For some purposes, these abstracts provide sufficient information, thus eliminating any need to resort to the original document.

DISADVANTAGES

This method of literature searching is not without its disadvantages. Depending on the



Receiving abstracts over a telephone line with a portable terminal. (Photo courtesy of Dialog.)

Central facilities for servicing information requests. (Photo courtesy of Dialog.)

particular organization, the cost of the service may be a critical factor. In the university setting, for example, where graduate assistants are available for manual literature searching, it may be difficult to authorize out-of-pocket money for computerized searching.

From our experience and that of various colleagues, the cost of an average computer search ranges from seven dollars to as much as sixty-five dollars with the average being approximately twenty dollars. This includes actual computer time, telephone charges, and printing of results. These costs can be reduced by utilizing off-line printing when the search is large because charges for the off-line work are based on a small fee for each citation rather than high computer-hour rates. It should also be noted that the costs cited above were for searches performed by a university library where no charges were made for the computer terminal and technical expertise.

Second, there are major differences among commercial data bases, particularly in the manner in which each is indexed by its respective producer. There is no standard, and indexing ranges from very broad and general to highly specific. Therefore, index terms provided by the producer must be used in combination with free text searching. The latter involves the selection of significant words that appear in the abstract or title of an article. The differences among the various systems may require that a trained intermediary, a search analyst, actually perform the search. This specialist must determine the need of the researcher and then interact with the computer to fulfill an information requirement he may not fully understand, thus reducing the potential effectiveness of the search.

Using the computer to retrieve literature references. (Photo courtesy of System Development Corporation, SDC Search Service.)

The proficiency required to interact effectively with several different data bases in an expeditious manner cannot be maintained by the researcher who makes relatively infrequent use of the system. We strongly recommend, however, that the researcher participate actively in defining his search, and, whenever possible, learn to access the computer himself.

There are only a few universities that train graduate students to do their own searches. One of these (the University of Pittsburgh) subscribes to over a dozen data bases and can work with the others under special arrangements. All information at this school is converted to its own language so that all data bases are searchable on campus by one program.

A third disadvantage to computerized searching is the limited time period covered by the data base. Although updated on a continuing basis, most data bases begin, at the earliest, with 1968 references.[7] This coverage of the literature may not be adequate for some searches, and a manual search will be needed for earlier articles. Further, the advertised dates of coverage contained in the description of a data base may not apply to all journals. In one case we traced the discrepancies between a manual search and a computer search to the fact that abstracting of a key journal began later than expected. Such problems can only be ascertained by experience or by direct correspondence with the originating producer.

FILES AVAILABLE

Determination of an appropriate data base for searching requires knowledge of the coverage of the various bases available. The addition of three or four new data bases each year[8] has broadened the number of sources from which information can be obtained, but has likewise increased the task of staying abreast of the location of this information. Frequently, two or more data bases must be searched to locate needed information.[9] When more than one base must be consulted, it is possible to avoid obtaining the same articles twice by using the NOT operator, perhaps on the author's name or on the journal name. Several data base guides and subject indexes are available that describe the features of each data base and assist the search analyst in comparing data base content.

Figure 2 lists some of the principal on-line business and economics data bases, as well as some from related areas that contain information relevant to business research. Journals such as **Interfaces, Management Science,** and **Operations Research** and, of course, **Harvard Business Review** typically are included.

The producer of a data base is the organization that creates the data base and maintains it by continually adding new information as it appears in the literature. The producer may be a private company or a trade or professional association. A vendor is an organization (i.e., Lockheed, SDC) that makes files from various producers available to the public.

As noted above, the existence of various partially overlapping data bases is a possiblity.

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[7] N.B. Crane and D.M. Pilachowski, "The Online Presentation," **Online** (October 1978): 20-29.

[8] G. Sharp, "Online Business Information," **Online** (January 1978): 33-39.

[9] D.T. Hawkins, "Multiple Database Searching: Techniques and Pitfalls," **Online** (April 1978): 9-15.

FIGURE 2. Data Base Survey*

Data Base	Coverage	Number of Citations and Dates
ABI/INFORM	Management and administrative methods and concepts	86,000 1971 to present
Economics Abstracts International	All areas of economics including international economics	65,000 1974 to present
EIS Industrial Plants	Current information on 130,000 businesses with annual sales of more than $50,000	130,000 current data
EIS Nonmanufacturing Establishment	Current information for nearly 200,000 nonmanufacturing establishments that employ 20 or more people	200,000 current data
Frost and Sullivan DM^2	Designed to aid corporate planners and market researchers in analyzing and forecasting the U.S. government as a market	200,000 1975 to present
Management Contents	Articles from approximately 200 United States and foreign journals and proceedings on a variety of business and management related topics	45,000 1974 to present
Pharmaceutical News Index	Articles from major industry newsletters and reports covering news about pharmaceuticals, cosmetics, medical devices, and related health fields	32,000 1976 to present
PTS U.S. Annual Time Series	Time series of historical and projected data on United States production, wages, prices, and demographics	35,000 1971 to present
PTS U.S. Regional Time Series	Time series of historical and projected data on population, income, employment, and earnings by industry in the United States	42,000 current
Psychological Abstracts	Coverage of the world's literature in psychology and the behavioral sciences from over 900 periodicals and 1,500 books, technical reports, and monographs	226,000 1967 to present

*Information for this survey was developed from "Dialog," a data base pamphlet of Lockheed Missiles and Space Company, Inc.

Overlapping Coverage by
ABI/INFORM (ABI)
and Management Contents (MC)

No. of Journals Abstracted	ABI Only	MC Only	Both	Total
Available in ABI	224	—	154	378
Available in MC	—	40	154	194

Therefore, knowledge of the specific journals covered by each data base is required. In the planning area, for example, **Planning Review** is covered by Management Contents but not by ABI/INFORM.

OPERATIONAL DETAILS

Once the search question has been analyzed and a strategy developed, the procedure to obtain printed results is straightforward.

1. Connect with the vendor's computer by telephoning the vendor, either by direct dial or through a communications system (Telenet or Tymshare).
2. Enter password to identify user.
3. Specify data base desired (Management contents, ABI/INFORM, etc.).

4. Enter commands for the search logic. Specific commands will vary with vendor
5. Order the information desired — instruct the computer to print search results either on-line or off-line.
6. Sign off.

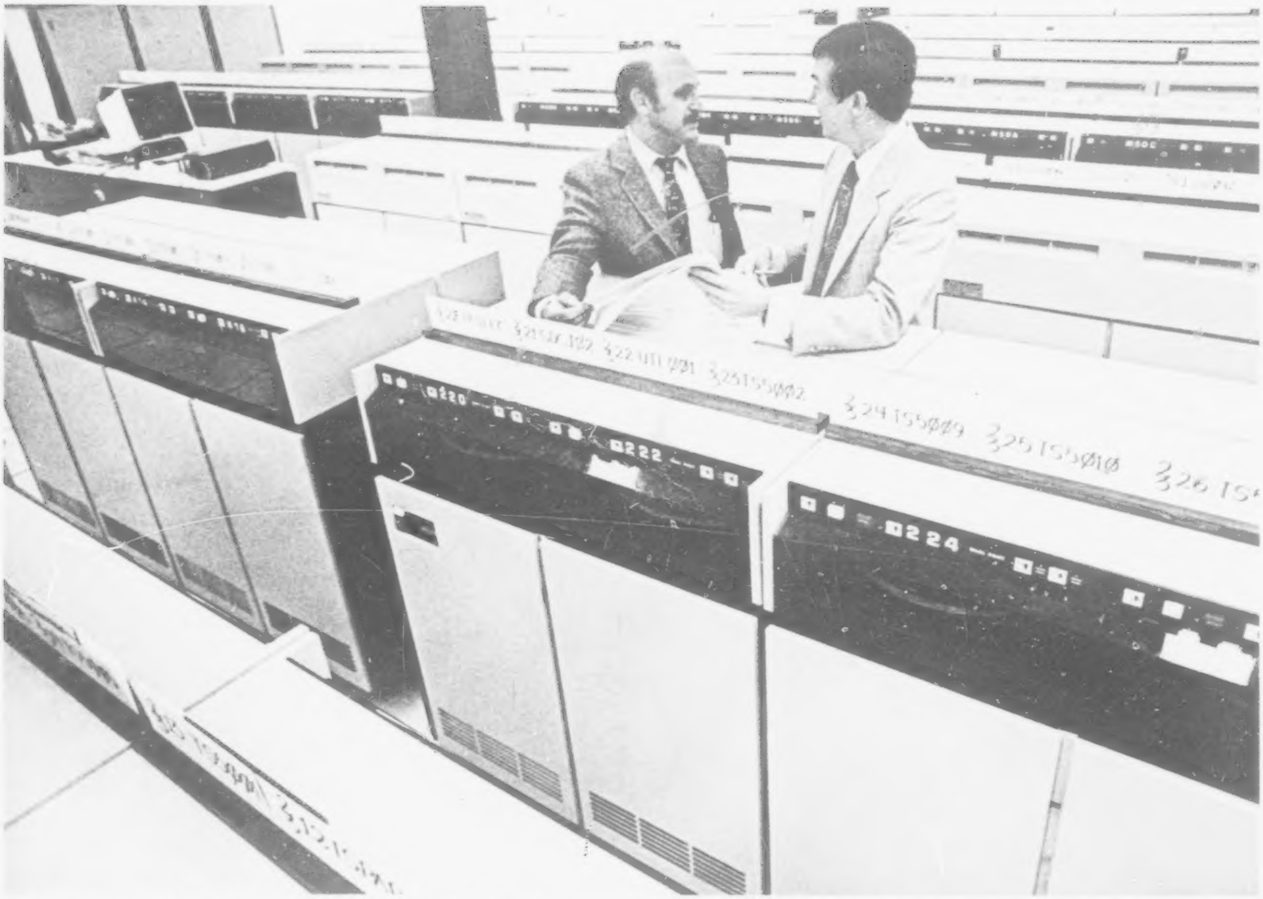
The total cost of a search is dependent on telephone connect costs, hourly computer connect rate, vendor method of charging for search results, and technical services.

A computer terminal to permit on-line searching can be purchased for about $1,500. Several technical service agencies also offer on-line computer searching. In addition to vendor charges, these services assess fees of as much as thirty dollars per search. The fee covers equipment and personnel costs, guides and other support material, and training of search analysts.

Computerized searching is provided through most university libraries and many corporate offices, where the searches are done quickly and the results printed out at that location if desired. Searches can also be printed at the computer location for mailing if the results are not needed immediately or if significant savings result from off-line printing.

SELECTIVE DISSEMINATION OF INFORMATION

Another application for computerized searching of interest to researchers is the selective dissemination of information (SDI) capability. The primary feature of this type search is the automatic updating of a previous search on a monthly or semimonthly basis. This is particularly helpful for an ongoing research project because the researcher automatically receives a printout of file additions each time the data base is updated. Thus, he is kept informed of the most current literature concerning his research. SDI searches are not available for all data bases and the search analyst should be consulted concerning individual applications.



On-line storage of data bases (Photo courtesy of System Development Corporation, SDC Search Service.)

CONCLUSION

The use of on-line, computer-based bibliographic searching can significantly reduce the amount of time now spent on manual literature searching and can result in a more complete bibliography. However, the associated cost factor, the current unfamiliarity with the system by researchers, and the limited time period covered by the data bases have restrained widespread use of this service.

Simplification of the overall systems and standardization of data base formats are needed to enhance the quality of on-line searches, to reduce the time required to conduct a search, and to lessen the dependence of the researcher on the search analyst. These measures would effectively reduce the cost of a computerized search and could promote its increased use by researchers.

Finally, dramatic changes are being forced on the traditional library. On the one hand, we have the soaring costs of energy, buildings, and published materials. To answer these threats we have a mushrooming technology that may ultimately make the printed word obsolete. Certainly the libraries of the future — public, corporate, and educational — will look far different. Instead of browsing through the "stacks," the scholar will undoubtedly converse with a computer terminal.

Conducting a literature search via telephone and terminal. (Photo courtesy of System Development Corporation, SDC Search Service.)

The Management Bookshelf

By Dwight Gardner, Business Librarian, M.B.A., M.S.L.S.

The Management Bookshelf is a service to our readers provided by the Elliott White Springs Library of the College of Business Administration of The University of South Carolina.

THEORY Z: HOW AMERICAN BUSINESS CAN MEET THE JAPANESE CHALLENGE

by William Ouchi
AMACOM
135 W. 50th St.
New York, NY 10020
1981, 288 pp., $12.95

This book examines Japanese management practices in detail and identifies those methods that can be applied successfully to American business. The experiences of such firms as Proctor and Gamble and General Motors with the Theory Z approach are analyzed and discussed.

REAGANOMICS

by Bruce Bartlett
Arlington House
333 Post Rd.
Westport, Conn. 06380
1981, 229 pp., $14.95

The author, a former staff economist for Rep. Jack Kemp of New York and currently a member of the Joint Economic Committee of Congress, presents an insider's view of supply-side economics. His explanation of the supply-side solutions to the nation's economic problems, along with a discussion of marginal tax rate cuts and balancing the budget, all make for informative and timely reading.

EMPLOYING THE HANDICAPPED: A PRACTICAL COMPLIANCE MANUAL

by Arno Zimmer
AMACOM
1981, 530 pp., $21.95

This volume covers the latest developments in the laws and regulations in building construction, work facilities, and job content as they relate to the employment of the handicapped. It also gives practical advice on adapting jobs and work environments for the handicapped, information on federally funded training programs, and the direction of the equal employment of the handicapped movement.

INFLATION PROOFING YOUR INVESTMENTS

by Harry Browne and Terry Cox
William Morrow & Co.
105 Madison Ave.
New York, NY 10016
1981, 512 pp., $14.95

Latest offering by the author of **HOW YOU CAN PROFIT FROM THE COMING DEVALUATION** and **NEW PROFITS FROM THE MONETARY CRISIS.** Provides some sound advice on establishing a balanced portfolio which is simultaneously as low on risks and as immune to the ravages of inflation as possible.

GREAT AMERICAN BRANDS: THE SUCCESS FORMULAS THAT MADE THEM FAMOUS

by David Cleary
Fairchild Books
7 E. 12th St.
New York, NY 10003
1981, 307 pp., $17.50

This book presents the histories of 34 famous American brands, such as Black and Decker, Campbell's, Ivory, and Levi's. A single brand is discussed in each chapter, with a special section on marketing insights that details the reasons behind the success of that particular brand.

YOU CAN DO MILLIONS OF DOLLARS IN BUSINESS WITH THE U.S. GOVERNMENT

by William Cohen
The Ronald Press Co.
605 Third Ave.
New York, NY 10016
1981, 375 pp., $22.95

Cohen relies on his extensive experience in the area of government marketing to explain the necessary steps to successful government sales. His advice applies to virtually all types of businesses, for the government is a consumer of such a wide variety of goods and services.

* * *

Readers are invited to submit titles of books that they wish to call to the attention of others.

STATISTICAL INDICATORS OF SOUTH CAROLINA BUSINESS

ITEMS	July 1981	July 1980	Latest Month Percentage Change from Year Ago
Total Bank Deposits ($ millions)	$ 5,548.4	NA	—
Demand	2,334	NA	—
Time	3,214.4	NA	—
Total Bank Loans ($ millions)	NA	NA	—
Savings in Savings and Loan Associations ($ millions)	5,667.1	5,292.4	+ 7.1
Sales and Use Tax Collections ($ thousands)	64,603.2	59,222.6	+ 9.1
Labor Market			
Civilian Labor Force (thousands)	1,366.9	1,326.4	+ 3.1
Employment	1,264.1	1,212.6	+ 4.2
Rate of Unemployment (percentage)	7.5	8.6	12.8
Nonfarm Wage and Salary Employment (in thousands)	1,184.6	1,165.8	+ 1.6
Manufacturing	386.2	376.4	+ 2.6
Contract Construction	72.8	75.4	3.4
Transportation and Public Utilities	55.0	53.4	+ 3.0
Wholesale and Retail Trade	229.0	226.9	+ 0.9
Finance, Insurance, and Real Estate	49.9	48.9	+ 2.0
Services, Mining, and Miscellaneous	170.0	162.6	+ 4.5
Government	221.5	222.0	0.2
Average Hourly Earnings, All Manufacturing (in dollars)	$ 6.18	$ 5.60	+ 10.4
Initial Unemployment Claims Filed in South Carolina	40,616	118,727	65.6
Placements by South Carolina Employment Offices (nonagricultural)	7,785	9,659	19.4
Indexes of Prices Received by Farmers (1966-68=100)			
All Farm Products	125	120	+ 4.2
All Crops	156	145	+ 7.6
Livestock and Products	87	87	
S.C. Parity Ratio	83	86	3.5
New Motor Vehicle Registrations			
Cars	8,829	9,140	3.4
Trucks	2,357	2,633	10.5

			First 7 Months		
			1981	1980	Percentage Change
Valuation of Building Permits Issued ($ millions)					
Total for all S.C. Counties	$160.7	$148.0	$ 962.4	$ 998.9	3.7
Available County Data					
Aiken	1.5	2.3	19.3	14.0	+37.9
Berkeley	1.7	6.7	20.6	43.4	52.5
Charleston	23.2	13.6	130.1	101.7	+27.9
Dorchester	1.5	3.6	16.7	19.0	12.1
Lexington	6.2	4.6	31.5	69.6	54.7
Richland	25.1	14.3	87.5	72.6	+20.5
Greenville	14.3	14.5	97.1	105.5	8.0
Pickens	8.0	1.8	26.1	30.7	15.0
Spartanburg	15.9	9.1	81.6	47.5	+71.8

---

[a] Less than one-half of 1 percent.

[b] Due to the termination of certain data series by the Federal Reserve Bank of Richmond, this series has been replaced by the Federal Home Loan Bank of Atlanta.

[c] Ibid., the South Carolina Employment Security Commission.

[d] Note: These amounts are now being reported in millions of dollars instead of thousands of dollars.

[e] NA: Not available.

[f] Institutions with total deposits of $15 million or more as of 12/31/79.

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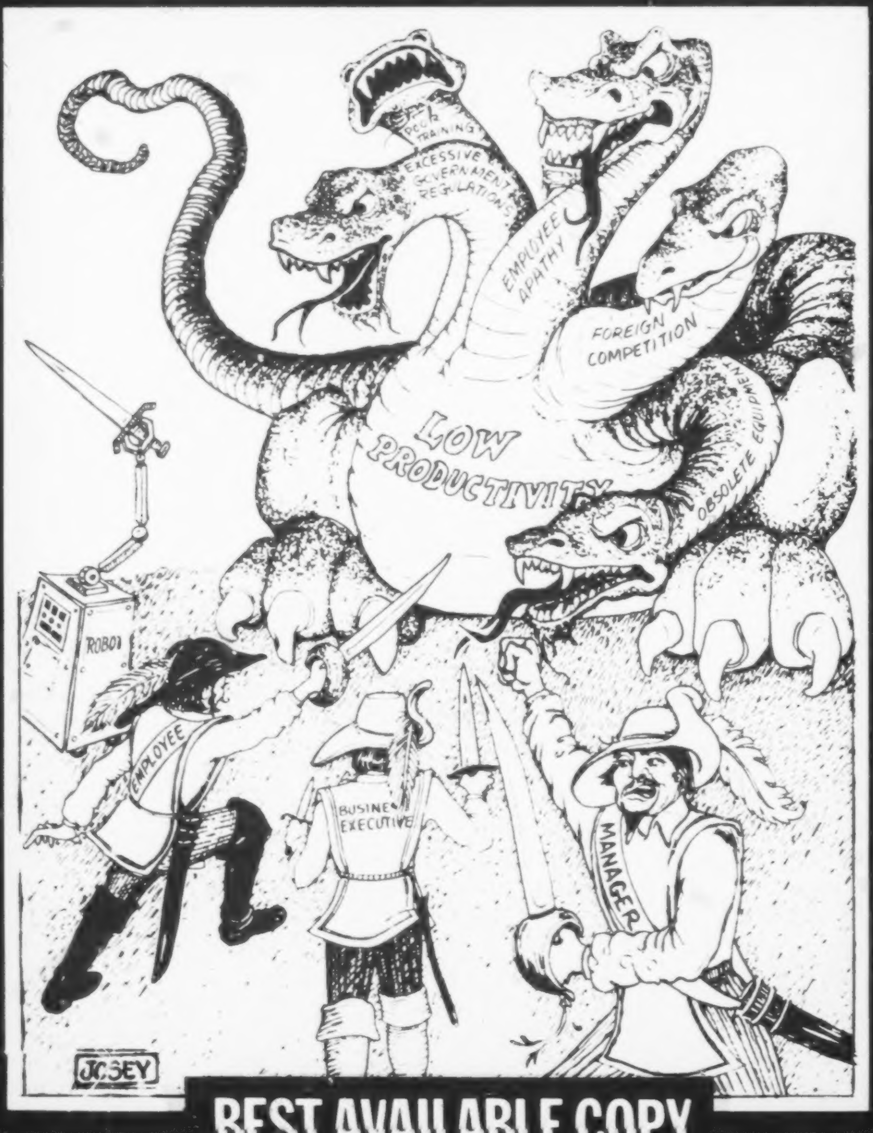
DIVISION OF RESEARCH ■ COLLEGE OF BUSINESS ADMINISTRATION ■ THE UNIVERSITY OF SOUTH CAROLINA

Productivity: Safeguard of the Future


POOR TRAINING
EXCESSIVE GOVERNMENT REGULATION
EMPLOYEE APATHY
FOREIGN COMPETITION
OBSOLETE EQUIPMENT
LOW PRODUCTIVITY
ROBOT
EMPLOYEE
BUSINESS EXECUTIVE
MANAGER
JOSEY

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Volume XXVIII, Number 4
March 1982

"Productivity: The Challenge We Face"
by Bruce Yandle

"Relative Regional Changes in Labor Productivity in South Carolina Manufacturing"
by David W. Hughes and James C. Hite

"The South Carolina Council on Productivity"
by Margaret Callison Pridgen

"People Systems: Motivation and Design for Effective Contribution"
by Richard W. Wolke

"So — You Want to Initiate an Involvement Program"
by Joe T. Gallegly

"South Carolina's Revolution of the 1980's"
by Wade J. Palmer

"Work Management Systems: One of the Alternatives"
by James E. Snakenberg, Jr. and Jerry H. Holmes

"Robotics: South Carolina Cog in Steel Collar Revolution"
by John W. Arrington IV

"The Productivity Task Force"
by Virginia Ann Van Seters

"The Management Bookshelf"
by Dwight Gardner

Statistical Indicators of South Carolina Business

Summary of Contents

3 Productivity: The Challenge We Face. In this brief introductory article, Dr. Bruce Yandle, Professor of Economics at Clemson University and a member of The Educational Resources Foundation's Productivity Task Force, looks at the productivity challenge in the public and private sectors of the economy and discusses the various facets of productivity the authors contributing to this issue cover.

4 Relative Regional Changes in Labor Productivity in South Carolina Manufacturing. Labor productivity is a key not only to the prosperity of this country but also to its survival. In this article, David W. Hughes of Washington State University and Dr. James C. Hite of Clemson University examine productivity in South Carolina and the United States and suggest that the two compare favorably.

10 In **The South Carolina Council on Productivity,** Margaret Callison Pridgen of Clemson University's Department of Information and Public Services discusses Gov. Riley's Productivity Council.

12 People Systems: Motivation and Design for Effective Contribution. For years the United States took for granted that it was the most productive nation in the world — but we've slipped, and our slip is showing. Here, Richard W. Wolke, Plant Manager for General Electric, Florence, South Carolina, provides ideas on how to combine machines and people, and remarks that the people end of the equation is the productivity key for America.

16 If you wish to improve productivity, the first step is to involve your employees, according to Joe T. Gallegly, Training Supervisor for Monsanto-Greenwood in **So — You Want to Initiate an Involvement Program.** Gallegly explains how the involvement program works at his company and provides a guide to the reader for fashioning his own.

19 South Carolina's Revolution of the 1980's. Americans must rid themselves of the downward productive drivers that threaten the economic lifeblood of the nation and its ability to compete in the international marketplace, says Wade J. Palmer, head of The Trident Productivity Exchange Steering Team. Here, Palmer outlines some of the results The Trident Productivity Exchange has been getting in its war on lagging productivity.

22 In **Work Management Systems: One of the Alternatives,** James E. Snakenberg, Jr. and Jerry H. Holmes of Carolina Power & Light Company's Work Force Performance Development Section describe work management systems and how they operate.

25 Robotics: South Carolina Cog in Steel Collar Revolution. Is there a robot in **your** future? It can do the boring, awkward, and/or dangerous jobs humans don't want to do. In this article, Riegel Textile Corporation's John W. Arrington IV explains industry's use of robotics.

29 In **The Productivity Task Force,** Virginia Ann Van Seters of USC's College of Business Administration reports on the methods and missions of The Productivity Task Force of the Educational Resources Foundation.

31 The Management Bookshelf, a regular feature in which Dwight Gardner, USC BA's Business Librarian, reviews books of interest to business practitioners.

32 Statistical Indicators of South Carolina Business. A regular feature, listing the latest available data.

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This month's cover: Cartoonist Eddie Josey shows how a well-conceived, coordinated program to increase productivity can overcome the problem and put America back on its competitive feet.

Productivity: The Challenge We Face

By Bruce Yandle

The productivity challenge and attempts to address it are familiar topics to South Carolina managers in both the private and public sectors. Efforts to be productive are as old as the free enterprise system. People competing to build a better life for themselves and those they love leads naturally to demands for improvements in the quality and quantity of goods provided in the market place.

In spite of the spur of competition, the desire to reduce costs, and the natural tendencies of the market system, American industry and publicly supported organizations today find themselves lagging behind their counterparts in other countries. Recognition of the problem has brought a predictable response.

People in South Carolina are sharing ideas for improving production. Workers and managers, administrators and employees are working together to address the problem.

The College of Business Administration at The University of South Carolina has made available this issue of the **Business and Economic Review** for The Productivity Task Force of the Educational Resources Foundation to explore productivity issues. The Task Force, working with industry, business, and government, has organized the contents.

Included in this issue is an article on The South Carolina Productivity Council, a report on techniques for measuring production in a service industry, an article on robotics, a look at a productivity exchange in Charleston and how it operates, ideas on Quality Circles and how they have been introduced into South Carolina industry, a report on the South Carolina economy and how it stacks up in the productivity challenge, and an article on The Productivity Task Force. Each of the offerings has been written by an individual or individuals with first hand knowledge of the subject.

The Productivity Task Force is grateful to the USC College of Business Administration, the staff of the **Business and Economic Review,** and most especially to the authors of the respective articles for making this issue possible. We hope this effort will prompt further discussion of productivity and bring early implementation of new management approaches for improving the well-being of South Carolina citizens.

Dr. Bruce Yandle is Professor of Economics at Clemson University and a member of The Productivity Task Force of the Educational Resources Foundation. He is also an Adjunct Scholar at the American Enterprise Institute in Washington, D.C. Dr. Yandle received his undergraduate education at Mercer University, and holds both M.B.A. and Ph.D. Degrees from Georgia State University. His research and teaching is in the area of government regulation.

EDITOR'S NOTE: This issue of the Business and Economic Review is dedicated to The Productivity Task Force of the Educational Resources Foundation. We are especially grateful to Dr. Bruce Yandle, Professor of Economics at Clemson University and a member of The Task Force, for coordinating this venture.

Relative Regional Changes in Labor Productivity in South Carolina Manufacturing

By David W. Hughes and James C. Hite

INTRODUCTION

In recent years there has been renewed interest in labor productivity as a key factor in the improvement of economic well-being. Labor often accounts for the largest proportion of production costs, and, hence, labor productivity has an important effect on per unit labor costs. Lower per unit labor costs have long been assumed to be one of the major attractions causing industrial development in South Carolina.

Since a large part of the industrialization in this state is of fairly recent origin, the capital stock in South Carolina manufacturing can be presumed to be newer and less obsolete than the capital stock in manufacturing in the United States generally. Economic theory suggests that labor productivity is highly dependent upon the quantity and quality of capital per worker. Consequently, one might suspect that labor productivity in South Carolina manufacturing compares favorably with that of the United States as a whole, and that labor productivity in South Carolina manufacturing is increasing somewhat faster than in all United States manufacturing.

Data are now available that make it possible to examine in detail movements in labor productivity in South Carolina and all United States manufacturing. Using the 1967, 1972, and 1977 **Censuses of Manufacturing,** we have performed a shift-share analysis of changes in labor productivity in South Carolina for the period 1967-'72, and subperiods 1972-'77 and 1967-'77. The shift-share technique allows us to isolate changes in labor productivity in various industrial sectors due to overall change in the national economy and changes due to factors specific to particular industrial sectors, leaving as a residual changes associated with situations unique to South Carolina. Thus, while the shift-share technique does not offer explanations for movements in labor productivity in South Carolina manufacturing, it does allow one to take a step toward such explanations by isolating the particular movements that are not the results of national or industrywide developments.

MEASUREMENT OF LABOR PRODUCTIVITY

Although labor productivity is much discussed, it is not easy to measure. Labor productivity is affected by the education and skill levels of the work force, by worker attitudes, by the plant and equipment (or capital) available for workers to use, and by the skills of management. Indeed, some economists argue that labor productivity is so intrinsically related to capital and management that it is not possible to isolate and measure it in any pure sense. Moreover, labor productivity can be thought of in both physical and monetary units.

It is possible to have an increase in the physical productivity of labor (e.g., number of automobiles produced per man-hour, yards of cloth per man-

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hour, etc.) without a necessary increase in the monetary productivity. This occurs when the increased physical output floods the market and causes a dramatic drop in product prices.

The measure of labor productivity employed in this analysis is the one used by a number of other analysts, i.e., value added per production man-hour. Value added is defined as the total monetary value of output minus the cost of nonlabor raw materials. (Note: It is a measure of monetary, not physical, productivity, and is influenced by changes in the price of the product.) Strictly speaking, value added per production man-hour is an index of the productivity of all factor inputs, including capital and management as well as labor. Regardless of the valid theoretical objections that can be raised to its use as a measure of true labor productivity, however, value added per production man-hour is of sufficient practical significance as an indicator of labor productivity to merit attention and examination.

EMPIRICAL RESULTS

Overall Changes

Table 1 shows value added per production man-hour by two-digit SIC industrial sectors in South Carolina and United States manufacturing in 1967, 1972, and 1977. The numbers shown in Table 1 have been adjusted to remove relative price changes using appropriate index series from the **Producers Price Index** and are all expressed in 1967 dollars. If no adjustments are made for the different relative degrees of importance of the various industries in the overall United States and South Carolina economies, South Carolina productivity stood at 61.57 percent of the United States average in 1967, increased to 64.36 percent of the national average in 1972, and then decreased to 62.90 percent in 1977. It is a matter of some interest that while the national average increased slightly from 1972 to 1977, the average in South Carolina actually declined absolutely during that time.

Closer examination of Table 1 reveals that only two industrial sectors in South Carolina showed higher productivities than their national counterparts in 1977. These were paper and allied products ($12.8839 per production man-hour in South Carolina and $11.8728 for the same industry nationally) and rubber and plastic products ($10.8828 and $10.6962, respectively).

As is widely known, the textile industry dominates South Carolina manufacturing. In 1967, textile mill products accounted for about 40 percent of all value added in this state's manufacturing.

TABLE 1. Labor Productivity (value-added per production worker man-hour) by Industrial Sector for South Carolina and the Nation 1967, 1972, and 1977 (in 1967 dollars)

Sector	SIC Code	State Labor Productivity			National Labor Productivity		
		1967	1972	1977	1967	1972	1977
Scientific instruments	38	$ 6.7174	$10.5115	$10.4292	$12.1056	$16.2137	$16.8946
Electric and electronic equipment	36	6.3275	7.9926	9.8490	9.3774	12.1769	14.1083
Machinery, except electric	35	6.3139	11.8862	9.0319	9.9951	12.5517	13.2752
Printing and publishing	27	9.5333	12.1760	11.8906	12.0016	14.7085	14.1563
Stone, clay and glass products	32	6.7405	8.0243	8.6245	8.7868	10.0004	9.8805
Furniture and fixtures	25	4.2195	5.5314	6.0312	5.8258	6.8706	7.4310
Textile mill products	22	4.6245	5.4788	6.3882	4.8252	5.9763	6.8447
Fabricated metal products	34	6.1630	6.9309	7.9110	8.3496	9.4752	9.1564
Food and kindred products	20	8.7591	8.9907	10.3650	11.7823	13.6065	14.3567
Lumber and wood products	24	3.8502	4.8911	5.2853	5.0905	6.1194	5.9846
Apparel and other textile products	23	3.1926	4.2046	4.5999	4.6197	5.4364	6.4969
Miscellaneous manufacturing	39	5.5342	8.4398	6.8969	6.9477	8.8318	9.8192
Paper and allied products	26	11.5689	12.7735	12.8839	9.1162	11.0720	11.8728
Primary metal products	33	5.5517	8.2228	6.6811	9.5649	10.1803	10.2018
Chemical and allied products	28	18.1145	20.3360	17.3205	21.6932	29.5521	27.0125
Rubber and plastic products	30	12.5577	—	10.8828	8.3378	11.0108	10.6962
All manufacturing: South Carolina and National	—	5.794	7.165	7.0965	9.411	11.132	11.282

Although that figure dropped to only about 30 percent in 1977, the textile industry continues to be of overwhelming importance in the state economic structure. Since value added per production hour in the United States textile industry in 1967 was only 51 percent of that for all United States manufacturing and 61 percent in 1977, the overall average productivity in South Carolina manufacturing cannot be expected to equal the national average for all manufacturing. The fact that the textile industry was able to make relative gains on the average of all United States manufacturing in the 1967-'77 period should have had a beneficial effect on productivity in South Carolina, providing the textile industry in the state was able to keep pace with the national textile industry. If productivity in the South Carolina textile industry had grown at the same rate as productivity in the entire United States textile industry, value added per production hour in the former would have been $6.56 in 1977. Examination of Table 1 will show that, in fact it was $6.39. Consequently, productivity gains in South Carolina textiles did not keep pace with those in the entire United States textile industry.

Shift-Share Analysis

The shift-share technique can be used to make similar analyses for other manufacturing industries in South Carolina. Results of shift-share analysis for the period 1967-'77 are reported in Table 2.

The first column shows the absolute changes in productivity in South Carolina in constant 1967 dollars. The next three columns show the components of these changes. The column labeled Share Effect shows the changes that would have occurred if productivity in each South Carolina industry had been at the same rate as that for all manufacturing sectors in the United States. Thus, the share effect is the impact of overall national factors on labor productivity.

The column labeled Industry Mix Effect shows the change that would have occurred if productivities in each South Carolina industry had changed at the same percentage rate as productivities in the same industry nationally. In other words, the industry mix effect shows the change that might be attributable to industrywide factors influencing productivity. Finally, the column labeled Regional Effect is a set of residuals, calculated by algebraically subtracting the share and industry mix effects from the absolute changes shown in the first column.

The regional effect column is of special significance because it indicates either positive or negative adjustments in productivity change associated uniquely with South Carolina. A negative regional effect means that, for some reason, productivity in South Carolina in that sector did not grow as fast as might have been expected, given the overall rates of growth of productivity in

TABLE 2. Results of Shift-Share Analysis at Two-Digit SIC Code Level for South Carolina, Compared to the United States, 1967-'77

Sector	Absolute Change in Productivity	Share Effect	Industry Mix Effect	Regional Effect
Food and kindred products	$ 1.6059	$1.7414	$ 0.1724	$-0.3079
Textile mill products	1.7637	0.9194	1.0161	-0.1718
Apparel and other textile products	1.4072	0.6347	0.6626	0.1099
Lumber and wood products	1.4351	0.7655	-0.0892	0.7588
Furniture and fixtures	1.8117	0.8389	0.3237	0.6491
Paper and allied products	1.3152	2.3000	1.1984	-2.1832
Printing and publishing	2.3573	1.8953	-0.1837	0.6457
Chemicals and allied products	-0.7939	3.6013	0.8509	-5.2461
Rubber and plastic products	-1.6739	2.4966	1.0554	-5.2259
Stone, clay, and glass products	1.8840	1.3401	-0.5011	1.0450
Primary metal products	1.1293	1.1037	-0.7341	0.7597
Fabricated metal products	1.7480	1.2253	-0.6297	1.1524
Machinery, except electric	2.7180	1.2553	0.8167	0.6460
Electric and electronic equipment	3.5216	1.2580	1.9342	0.3294
Instruments and related products	3.7118	1.3355	1.3219	1.0544
Miscellaneous manufacturing industries	1.3627	1.1003	1.1870	-0.9246

Source: Calculated from data in 1967 and 1977 **Censuses of Manufacturing.**

TABLE 3. Results of Shift-Share Analysis at Two-Digit SIC Code Level for South Carolina, Compared to the United States, 1967-'72 (in 1967 dollars)

Sector	Absolute Change in Productivity	Share Effect	Industry Mix Effect	Regional Effect
Food and kindred products	$ 0.2316	$ 1.6018	$-0.2456	$-1.1246
Textile mill products	0.8543	0.8457	0.2575	-0.2489
Apparel and other textile products	1.0119	0.5838	-0.0194	0.4475
Lumber and wood products	1.0409	0.7041	0.0742	0.2626
Furniture and fixtures	1.3119	0.7716	-0.0149	0.5552
Paper and allied products	1.2046	2.1156	0.3663	-1.2773
Printing and publishing	2.6427	1.7434	0.4069	0.4924
Chemicals and allied products	2.2215	3.3126	3.2361	-4.3272
Stone, clay, and glass products	1.2837	1.2326	-0.3017	0.3528
Primary metal products	2.6711	1.0153	-0.6581	2.3139
Fabricated metal products	0.7679	1.1270	-0.2962	-0.0629
Machinery, except electric	5.5723	1.1546	0.4604	3.9573
Electric and electronic equipment	1.6651	1.1571	0.7319	-0.2239
Transportation equipment	1.8581	1.0363	0.9453	-0.1235
Instruments and related products	3.7941	1.2284	1.0512	1.5145
Miscellaneous manufacturing industries	2.9055	1.0121	0.4887	1.4047

the economy generally and in that particular industry nationally. A positive regional effect indicates that productivity growth in South Carolina outpaced both the overall average for all manufacturing and that for the national industry.

An examination of Table 2 shows that 11 of the 16 two-digit SIC sectors represented in South Carolina manufacturing exhibited positive industry mix effects for the period 1967-'77. These 11 sectors fall into 2 groups: (1) fast-growing industries with high absolute levels of labor productivity in 1967, of which electric and electronic equipment and instruments and related products are the outstanding examples; and (2) catch up industries in which labor productivity in 1967 was relatively low, examples being the very important textile mill products and apparel and other textile products, as well as rubber and plastic products manufacturing. The largest South Carolina sector with a negative industry mix effect was fabricated metal products.

The results of the shift-share analysis for the 1967-'72 subperiod, shown in Table 3, and for the 1972-'77 subperiod, shown in Table 4, reveal that six sectors displayed positive, and three sectors negative, industry mix effects on productivity in both time periods. Textile mill products was the most important South Carolina sector with consistently positive industry mix effects, but the nonelectrical and electric and electronic equipment sectors and instruments and miscellaneous manufacturers also had positive industry mix effects in both subperiods. Exhibiting negative industry mix effects in both subperiods were stone, clay, and glass products; primary metals; and fabricated metals. Of the six remaining sectors that appear in Tables 3 and 4, three showed positive industry mix effects in the 1972-'77 subperiod but negative effects in the 1967-'72 period, and three had positive effects in the first subperiod but negative in the second.*

The industry mix effect is useful in helping to understand how the structure of the South Carolina economy has affected relative rates of change in labor productivity. The regional effect, however, while more difficult to interpret, is more interesting since it is independent of national trends and influences. Of the 16 sectors in Table 2, 6 exhibited negative regional effects for the 1967-'77 period, and accounted for 63 percent of value added by South Carolina manufacturing. Since a negative regional effect means that for some reason the sector failed to keep pace in productivity growth with the national economy and the national industry of which it is a part, the existence of negative regional effects for important components of the South Carolina economy should be a matter of serious concern. Of these six sectors, textile mill products and chemicals and allied products manu-

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*Because of certain data problems, there are only 15 sectors appearing in both subperiods. Transportation equipment manufacturing is included in Table 3 referring to the 1967-'72 subperiod but not in Table 4 referring to the 1972-'77 subperiod.

TABLE 4. Results of Shift-Share Analysis at Two-Digit SIC Code Level for South Carolina, Compared to the Nation, 1972-'77 (in 1967 dollars)

Sector	Absolute Change in Productivity	Share Effect	Industry Mix Effect	Regional Effect
Food and kindred products	$ 1.3744	$0.1212	$ 0.3745	$ 0.8787
Textile mill products	0.9093	0.0738	0.7223	0.1132
Apparel and other textile products	0.3953	0.0567	0.7635	-0.4249
Lumber and wood products	0.3942	0.0659	-0.1737	0.5020
Furniture and fixtures	0.4997	0.0745	0.3766	0.0486
Paper and allied products	0.1103	0.1721	0.7518	-0.8136
Printing and publishing	-0.2854	0.1641	-0.6212	0.1717
Chemicals and allied products	-3.0155	0.2740	-2.0027	-1.2868
Stone, clay, and glass products	0.6002	0.1081	-0.2043	0.6964
Primary metal products	-1.5427	0.1108	-0.0943	-1.5592
Fabricated metal products	0.9800	0.0933	-0.3266	1.2133
Machinery, except electric	-2.8543	0.1602	0.5249	-3.5394
Electric and electronic equipment	1.8565	0.1077	1.1600	0.5888
Instruments and related products	-0.0823	0.1416	0.2998	-0.5237
Miscellaneous manufacturing industries	-1.5429	0.1137	0.8298	-2.4864

facturing are, by far, the most important. Consequently, the discussion that follows will focus exclusively on these two sectors which account for nearly 50 percent of the value added by South Carolina manufacturing.

Textile and Chemical Industries

In order to examine more closely the changes in labor productivity in the textile and chemical industries in South Carolina, detailed shift-share analysis was performed at the three-digit SIC levels. This analysis made it possible to note changes in the various component subsectors. The results of the analysis for the textile industry are reported in Table 5. Results for the chemical industry are reported in Table 6.

It is known that major technological advances have occurred since 1967 in textile manufacturing. According to an industry source, 92.6 one thousand picks per man-hour were possible with 1967 state of the art technology, but by 1975, 159.5 one thousand picks per man-hour were possible — a gain of 65.1 percent.

While the results shown in Table 5 are mixed with regard to industry mix effects, most of the subsectors within the textile industry exhibited positive industry mix effects in the 1972-'77 period. No doubt those positive industry mix effects were due to investment in new capital that embodied the technological advances in physical productivity. Indeed, the overall growth in textile labor productivity in the 1972-'77 period is noteworthy because of the relatively slow growth in the national economy generally during that period. While several subsectors within the South Carolina textile industry showed negative regional effects in

TABLE 5. Results of Shift-Share Analysis for Textile Mill Products, Two- and Three-Digit SIC Code Levels, South Carolina, 1967-'72 and 1972-'77

Sector	Absolute Change in Productivity		Share Effect		Industry-Mix Effect		Regional Effect	
	1967-'72	1972-'77	1967-'72	1972-'77	1967-'72	1972-'77	1967-'72	1972-'77
All textile mill products	$ 0.8543	$0.9093	$0.8457	$0.0738	$ 0.2575	$0.7223	$-0.2489	$0.1132
Weaving mills	0.7298	1.7315	0.5887	0.0697	-0.1024	1.4063	0.2435	0.2555
Knitting mills	-0.0575	2.0900	1.0511	0.0767	0.4294	0.5992	-1.5380	1.4141
Yarn and thread mills	0.3768	4.0557	0.8680	0.0690	-0.3025	1.3959	-0.1887	2.5908
Miscellaneous textile goods	1.2780	4.2758	0.8178	0.0775	0.3460	1.0154	0.1142	3.1829

Source: Calculated from data in 1967, 1972, and 1977 **Censuses of Manufacturing.**

the 1967-'72 period, all showed very positive regional effects in the 1972-'77 period.

The situation is less sanguine in the case of productivity change within the chemical industry. Traditionally, the chemical sector has had among the highest labor productivity in manufacturing. Value added per man-hour in the entire United States chemical industry increased by more than five dollars over the South Carolina figure during the 1967-'77 period. In fact, productivity in the South Carolina chemical industry declined in absolute terms during this period. The chemical industry in this state is much more oriented toward production of synthetic fibers than the industry nationally, however, and it is possible that the disturbing movements in productivity in the former were due to the mix of subsectors.

Data on labor productivity in the various component subsectors of the South Carolina chemical industry were not sufficient to allow a detailed shift-share analysis for the 1967-'72 subperiod. Yet, an examination of Table 6 shows that the industry mix effect for the plastics and synthetics subsector during that period was strongly positive. Consequently, that subsector exhibited marked progress in labor productivity nationally during the 1967-'72 period. The significant negative regional effect for South Carolina, however, indicates that in South Carolina it did not keep pace.

TABLE 6. Results of Shift-Share Analysis for Chemical and Allied Products, Two- and Three-Digit SIC Code Levels, South Carolina, 1967-'72 and 1972-'77

Sector	Absolute Change in Productivity		Share Effect		Industry-Mix Effect		Regional Effect	
	1967-'72	1972-'77	1967-'72	1972-'77	1967-'72	1972-'77	1967-'72	1972-'77
All chemicals and allied products	$2.2215	$-3.0155	$3.3126	$0.2740	$3.2361	$-2.0027	$-4.3272	$-1.2868
Plastics materials and synthetics	2.9605	-7.9862	2.9742	0.2590	5.3012	-5.0270	-5.3149	-3.2182
Agricultural chemicals	5.5291	5.3264	1.5592	0.1894	5.9422	-1.1309	-1.9723	6.2679

Source: Same as Table 5, this article.

In the 1972-'77 subperiod, the industry mix effect for the plastics and synthetics subsector was strongly negative, meaning that the subsector nationally was unable to keep pace with overall economywide gains in productivity. A negative regional effect for South Carolina indicates that that subsector was farther below the national pace than plastics and synthetics operations in the rest of the country. Note, however, that Agricultural Chemicals displayed robust regional effects.

Examination of Table 6, therefore, clearly reveals that the relatively poor performance of productivity in South Carolina's chemical industry is, at least in part, due to the mix of subsectors making up the industry in the state. Had that industry been more diversified, its growth in labor productivity might have been sufficient to have resulted in a positive regional effect for all chemical and allied products manufacturing. Nevertheless, the productivity problems that have plagued the plastics and synthetics subsector generally seem to have been more severe in South Carolina. Shift-share analysis provides no clue as to what the nature of those problems may be.

CONCLUSIONS

While South Carolina manufacturing managed to make some relative gains in labor productivity compared to the nation in the 1967-'77 period, most of those gains were confined to the 1967-'72 subperiod. During the 1972-'77 subperiod, South Carolina manufacturing actually suffered a relative decline in labor productivity compared to the nation. The recession of 1973-'75 had adverse effects on labor productivity throughout the economy, but it seems likely that, with the exception of the textile industry, South Carolina manufacturing has experienced greater difficulty in recovering from that recession than has manufacturing generally across the nation.

One of the bright spots in an examination of relative labor productivity in South Carolina is the performance of the textile industry in the 1972-'77 subperiod. While productivity as measured in monetary units did not increase proportionally to the possibilities for gains in physical productivity, the gains in the South Carolina textile industry were substantial and significant. During the 1972-'77 period, the South Carolina textile industry outperformed the industry nationally in productivity gains in every subsector. These gains have special significance for lower per unit production cost in textile manufacturing, and eventually, for higher wages for textile workers.

With more than 20 percent of its households still living in poverty, South Carolina continues to need new industrial investment if it is going to raise incomes and expand economic opportunities. If the Palmetto State can outpace the nation in labor productivity gains, it will have a major advantage in attracting additional industrial investment and in securing better wages for its workers. Consequently, continued monitoring of relative labor productivity movements in South Carolina deserves high priority.

The South Carolina Council on Productivity

By Margaret Callison Pridgen

Productivity is like barbeque. People talk about it a lot. Everybody has a different recipe for it. There are a number of self-proclaimed experts on it, some of whom have even written books. And — nobody can agree on where, exactly, it's done best.

"Just discussing productivity has become a small cottage industry in the United States," said Martha Hesse, Associate Deputy Secretary of the United States Department of Commerce, during "Optimizing the People Resource," a state productivity briefing sponsored by the Educational Resources Foundation, the South Carolina Productivity Council, the South Carolina Chamber of Commerce, the South Carolina Council on Economic Education, and the Trident Productivity Exchange last fall in Columbia.

The reason for all the talk is clear. After rising at a rate of 3 percent a year throughout the 1950's and early 1960's, the productivity of American industry — the output per unit of labor — rose only 1 percent a year in the late 1970's. The rate of productivity growth declined for all Western manufacturing nations during that period, but our slide was steeper than most.

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The United States still leads the world in output per worker, but we've lost ground in the last 20 years to nations like Japan and West Germany. In the steel and auto industries, we may have lost the battle altogether.

Hesse said economists can attribute about half of the decline in productivity to

—slower growth of capital investment per worker;

—costly and nonproductive government regulations;

—the changing United States work force, which today contains more women and young people;

—less basic research and development on new products and techniques;

—the energy shocks of the mid-1970's: conservation measures used capital that might have gone to increase productive capacity; and

—persistent inflation, which changed corporate investment strategies to favor inflation hedges rather than productive investment.

Whatever the causes — and the reasons for about half the productivity slide remain murky — there is evidence of a new spirit and a determination to find a cure.

One of the groups in South Carolina working on a cure is The South Carolina Council on Productivity. Gov. Richard W. Riley signed an executive order establishing the 13-member Productivity Council on May 6, 1981. Appointed to serve as members of the council were the following:

William J. Clement,
Architect
Columbia

H. William Close,
Chairman of the Board
Springs Mills, Inc.
Fort Mill

Virginia Grose,
Vice-President — Marketing
South Carolina National Bank
Columbia

Dr. Virginia Hardie,
Business Consultant
Pendleton

Helen Harvey,
Realtor
Beaufort

The Hon. Ralph Hendricks,
Businessman and Mayor
Simpsonville

Erwin Maddrey,
President
Riegel Textile Corp.
Greenville
(Chairman of The South Carolina
Council on Productivity)

Edgar L. McGowan,
Commissioner
South Carolina Department of Labor
Columbia

Dr. James A. Morris,
Economic Consultant
Columbia

Jack E. Powers,
Director of Employee and Community Relations
Cryovac Div., W.R. Grace & Company
Duncan

Oscar Prioleau,
Director of Training
Daniel International Corporation
Greenville

W. Matthew Self,
Vice-President
Greenwood Mills
Greenwood

John C. Walker,
Corporate Director of Industrial Engineering
Sonoco Products Company
Hartsville

Roland O. Rabon, Sr.,
Special Assistant to the Executive Director
South Carolina Budget and Control Board
Columbia
(Executive Director of The South Carolina
Council on Productivity)

Gov. Riley charged the council with addressing economic education, technology transfer, productivity measurement, and the effects of government regulations on productivity. The council is directed to "serve the private sector as a center for both the collection and dissemination of productivity information." One of the first things the council did was to ask State Budget and Control Board Director Bill Putnam to suggest agencies they might work with to obtain input in determining roadblocks to productivity.

At the request of the Governor, the Budget and Control Board, or the General Assembly, the group is also to "assist officials in state government with their productivity improvement programs." Riley has said, "Productivity should be the question at the core of any governmental initiative and the barometer for measuring its success." Government's role, according to Riley, is to provide as much quality service as possible to support and enhance the productivity of the private sector. "Day care, health care, education—any government service—should be designed to support and maintain a productive society and citizenry."

Riley believes state government itself needs to improve productivity through new and innovative human resources policies for state employees regarding performance, accountability, and reward. Erwin Maddrey agrees, and sees that as a big part of the mission of the Governor's council he heads. Maddrey thinks "we can provide state government with an objective review of its management techniques."

> It's like a pendulum. We had very little accountability in state government in the past and there were abuses. So we had a reform movement of sorts that resulted in bureaucratic oversight and increased reporting responsibilities, increased accountability. Now, however, we may have gone too far, and that's one of the things The Productivity Council will be looking at. I think we can help provide the public sector with the tools to evaluate the costs and measure the effectiveness of government actions.

Back in the private sector, there is sharp disagreement among productivity experts on the significance of technological innovation. Some say the revolution now underway in robotics, automated manufacturing, and automated process control will take care of improving productivity in those industries that can afford to invest in new technology. Other experts believe 85 percent of the potential for improvement lies with management productivity; hence, the current fascination with "Japanese management" techniques. And, indeed, Richard A. Jacobs, Vice-President of Kearney: Management Consultants, said at the "Optimizing the People Resource Conference" that the Japanese President of Honda Corp. believes "If the United States' only response to competition is reindustrialization and capital investment, then Japan has nothing to worry about."

"Productivity is a management problem, not just an industrial engineering problem," Jacobs said. "Use of people resources is the one thing that differentiates successful and unsuccessful companies." He believes the hallmarks of a successful productivity effort are

—the involvement and commitment of top management,

—knowing the difference between efficiency and effectiveness,

—goal setting, and

—management productivity.

With technological change, Jacobs says, the United States economy is shifting away from an industrial base toward a service base, with large labor pools of managers and clerks, or "knowledge workers." Management and productivity measurement tools are badly needed for these types of workers.

Jacobs predicts that 90 percent of this country's companies will have formal productivity improvement programs in place by 1985. These programs will involve the office and secretarial pool as well as the people on the plant floor. Recognizing South Carolina companies who establish such programs will be a function of The South Carolina Council on Productivity. Periodically over the next few years, the council will recognize outstanding efforts by industry to improve productivity. Council members will also gather information on effective technology and techniques for measuring and improving productivity, and will share that information with business and public agencies through printed reports, seminars, briefings, and speeches.

For more information on The South Carolina Council on Productivity, contact Roland O. Rabon, Sr. at 758-5606.

People Systems: Motivation and Design for Effective Contribution

By Richard W. Wolke

EDITOR'S NOTE: The article below is based on a speech by the author for "Optimizing the People Resource," a productivity briefing conference for senior executives of South Carolina, October 27, 1981, at Columbia's Carolina Inn. The meeting was sponsored by the Educational Resources Foundation, The South Carolina Productivity Council, the South Carolina Chamber of Commerce, the South Carolina Council on Economic Education, and The Trident Productivity Exchange.

THE ENEMY IS US

For decades, the United States has been the most productive nation in the world, with technological leadership and a standard of living second to none. We've slipped a little. Our lead is being overtaken at a frightening pace. If we're to survive and prosper in the global competitive battle, we must act decisively. We can't win by imposing restrictive tariffs, establishing quotas, complaining about federal policies, or blaming any external factor. Walt Kelly, the cartoonist, hit the nail on the head when he had his character Pogo Possum say, "We have met the enemy and he is us."

A year or so ago, NBC presented a White Paper, "If Japan Can, Why Can't We?" In it the statement was made that 85 percent of the problems in American manufacturing were the fault of management. Many managers' first reaction to this was resentment and defensiveness. Further reflection, however, should convince us of the rightness of the statement.

HOW DO WE CHANGE THIS?

Business Week calls it the reindustrialization of America. I don't quarrel with that. But basic to such a reindustrialization is a course change in the attitudes and behavior of all segments of business and industry — management and labor. Japan and the other nations that are successfully improving their productivity are doing so with a combination of machines **and** people. I submit that the people end of the equation is the key for us in America.

To put my comments in perspective, you need to know what I see as the underlying support for any people-oriented approach to productivity. It boils down to a few necessary management beliefs. First, our people have intelligence which they can, and want to, use. This reserve of employee intellect is probably our greatest untapped resource.

Next, people want to participate and to be treated as unique, individual human beings. They want meaning in their lives, and have needs which include pride, a sense of accomplishment, and a feeling of importance. Third, people have a right to be kept informed of everything about the business they need to, or should, know. And, finally, management has to change first if employee attitudes are to change. Management can't "fake it." The change, and the commitment, has to be real.

Former President Carter referred to a malaise affecting the American people. This malaise is best typified by two men talking, with the first saying, "What do you think about the statement that what's wrong with America is ignorance and apathy?" The second replies, "I don't know and I don't care."

Richard W. Wolke is Plant Manager for the General Electric Company, Florence, South Carolina, and a member of The Productivity Task Force of the Educational Resources Foundation. He holds a B.S.E.E. Degree from Case School of Applied Science in Cleveland, Ohio. Wolke joined General Electric in 1947 as a Design Engineer in Schenectady, New York. In 1974, he was named Manager of the Mobile Radio Department's plant in Florence, South Carolina; and in 1977, he went to Copenhagen, Denmark, for 3 years as Manager of Manufacturing for Storno A/S.

In the General Electric Plant at Florence, South Carolina, which I believe is a fairly typical industrial situation, the production workers do care about their jobs, their productivity, their quality, and their company. That caring, however, isn't really visible and hasn't been focused. For decades, we managers have utilized our people as if they were extensions of their machines. In effect, we have been buying their backs, arms, and legs, and ignoring their brains. We have developed an adversary relationship between management and the production worker, a "we versus them" attitude. We have so blunted their caring that the employees say, "If management doesn't care, why should we?" Time studies, scientific management, management by exception, breaking tasks down to the simplest components, assembly lines — all the basic elements of the industrial revolution — have served us well, but have alienated the workers. In today's global competitive climate, we must eliminate the alienation and develop a team approach of dedicated, involved people. We have to keep the good things from the past 150 years and undo the bad. In this way, we can redirect industrial energies. The stakes in this redirection are nothing less than survival.

To be successful, we must maximize the contribution of all resources, including the intellectual capacity of every worker. We know pretty well how to maximize the technical and mechanical resources, but we're not as good at the people end of the business. Why are the people important to the success of the enterprise? In the first place, the person closest to the job is the one who knows most about it. Secondly, the person — be he the plant manager or the floor sweeper — who enjoys his work and is interested in it does a far better job.

To maximize productivity, we must develop the systems that will encourage the most effective contribution of every person. The employee at every level must feel free to participate, and must fully understand what he or she can do to contribute to the health and success of the enterprise. The employee must understand his or her stake in the success or failure of the business.

How Do We Establish the "People Systems" to Accomplish These Objectives?

The first requisite is a change in management's own attitude and beliefs. Until, and unless, we change, we have no hope that our people will change. We must set the climate first. Because each of us has been reasonably successful using the "old" ways, we've become reinforced in those methods. It is no small job to change ourselves.

The basic first step in improving employee contribution through participation is communication — two-way communication. We have to create the climate for our people to feel free to open up and talk to us, and for us to talk to them as equal partners. We in management have been talking to, or at, our people for so long that we haven't really developed the ability to listen. If you'll reflect on your own circle of business associates, you'll realize that the good managers are also good listeners. I won't debate whether they are good managers because they listen well, or listen well because they are good managers, but the two seem to have a symbiotic connection.

What are the obstacles to upward communication? I've run across six that seem to be the major ones.

First is the fear that expressing one's true feelings to the boss might be dangerous. It could get you fired, or it could block promotion. Next is the belief that management is not interested in employee problems. Third, there is the feeling that employees are not rewarded for good ideas. Fourth, is the lack of managerial accessibility and responsiveness. Finally, there is a belief that upper management does not take prompt action on problems or concerns.

To overcome these obstacles to two-way communication, management must make a commitment to listen and to consider, and to feed back the results of that consideration. If we do only that, the results will be startling. You'll note I didn't suggest that management commit itself to action on employee problems, concerns, ideas, or requests. Sometimes the answer has to be "no." But regardless of whether our response is affirmative or negative, we need to explain the "why" to our people.

In my plant, we have a Manager of Communication. His job is not just to tell the employees everything they need or want to know about the business. More importantly it is also his responsibility to create the climate and vehicles for **upward** communication. He trains our individual managers in nonjudgmental listening and the art of encouraging feedback. We've also created a variety of vehicles to promote communication and two-way information flow. For example, I hold monthly round table meetings with randomly selected production people. Supervisors hold round table meetings with their work groups. We use telephone answering and recording equipment to give a daily message and to provide opportunities for people to leave a concern or a message on tape.

Our top managers are required to be in their production areas and to be available for questions and conversations. Our frontline supervisors do not have offices, so they are more accessible to their people. We use a "speak up" write-in form that provides a way for people to get answers to questions or concerns.

Other activities include weekly staff meetings held by every manager, meetings for all exempt personnel, meetings for all employees, plant publications, and surveys on a wide variety of subjects ranging from employee attitudes to what they prefer in the way of pay and benefit changes.

The second step toward improving employee contribution is in the area of education. For example, we created a course called "Fundamentals of Manufacturing" for hourly people. It is a self-nomination course that runs for 20 weeks, 2 hours a week, on the employee's own time. It explains how the business operates and how management arrives at its decisions. The course is small enough to permit two-way exchange, and the instructors are the plant's managers who talk about their own areas and jobs. We invariably have two or three times more applicants than we can handle.

Courses formerly restricted to management people have been opened on a self-nomination basis to the entire plant. Quality Circle training, effective presentation, specialized courses for supervision, and a variety of other educational offerings are on an ongoing basis. Our job-related training programs are designed to teach people at all levels in the organization about their jobs and our business. The intent is to increase understanding of the decisions that are made, and to help employees make better decisions themselves, at all levels. Every operator and every person in the plant makes small decisions daily which, cumulatively, make or break us.

In terms of the people systems to achieve the business objectives, our intent is to enlist employee participation and commitment. We feel that we've created the communication base and have a continuing education program about the business.

We began Quality Circles about a year ago, doubled the initial number six months later, and are now in the process of doubling it again. We ultimately expect to have 50-60 percent of our work force in circles. We also have, and are still establishing, cross-functional "productivity teams" which operate much as circles do, but with a focused, management-selected mission.

Along with efforts to improve productivity goes a concern for quality. In this area, we've surveyed our people to discover what their real attitudes are, and how they perceive the management concern for quality. Based on the results, we're trying a pilot test of a specific project to improve quality and to increase employee involvement. Suggestion plans, cost improvement teams, and innovative experimental compensation plans are all designed to foster employee involvement. We're finding that when you go to the employees and solicit their ideas, you get valuable suggestions. We've also found that one additional ingredient is necessary. When you solicit the ideas, you have to listen with an open mind and a willingness to implement the idea if it's good.

A Case in Point

An illustration helps to make the point. As a result of automation and work transfer, we found we could combine three plant areas into one. Our engineers laid out the new work area, complete with blue prints, flow charts, and all the usual space allocation information. We went to a Quality Circle composed of some of the people in the affected areas, explained what the drawings showed, and how the new area was supposed to work. We then asked for their suggestions. In all, the group came up with about eight significant modifications of the engineers' plan. Our engineering professionals admitted that the proposed revisions were things they had not thought of, nor would have. And, most importantly, the proposed changes made the area a lot better and more efficient.

Needless to say, we implemented the employee ideas in the actual layout. This experience proved conclusively to me that "What do you think?" is a lot more effective than "Do it my way." Most importantly, the employees themselves recognized that they had made a significant contribution to the business.

Had we tried to gain employee involvement in a plant modification a year or two ago, our people would have been skeptical and suspicious. "Why are you asking us?" "What's the catch?" they would have asked. Since we'd already built a few bridges of understanding on both sides, though, the people knew that if they came up with better ideas, we would enthusiastically adopt them. Even if an idea has only minimal benefits, I have insisted that we implement it, provided, of course, that it doesn't require major commitments of resources. If their ideas won't work, we tell them so, and why. Nothing beats prompt, complete feedback — the explanation increases understanding and future participation.

CONCLUSIONS

We've found that management's changes — or for that matter, any of the people attitude changes — are best made in small bites. Pronouncements of new directions and sweeping changes are doomed to failure. But — a step-at-a-time approach, with each step breeding another step, can result in incremental changes that are revolutionary in total.

The first step is to isolate an area and devote energies to making changes there. When the results are good, then go on to another area. Success breeds success, if the foundation is laid carefully.

A people system that works in one plant — mine or any other — may not work in yours. You have to adapt and experiment, and find what works in your own situation. I am very suspicious of anyone who claims to have the one "right solution" for all situations.

Measurement is a vital aspect of any people system. We do a lot of measuring to determine the results of our programs. For example, our annual climate and attitude surveys are not only an excellent communications tool but also a measure of the effectiveness of a variety of programs.

We learned two months ago from surveys that our people are not "uptight" about automation. Our people don't view these actions as a threat to job security, because we've communicated the reasons, the timetables, the impact, and what we propose to do.

We measure the performance of Quality Circles — not to determine whether or not to continue them, nor whether they are "paying off" — but to assess their impact on attitudes and on our business. We measure circle members' attitude changes through person-to-person, as well as written, surveys.

With valid measurements, we are in a position to know what works, why it works, and what we're doing right or wrong. Thus, we can take appropriate action quickly. We don't have to depend on hunches or "gut feel" to determine the effectiveness of what we're doing.

There is one caution I'd like to express on all of this: be prepared for skepticism and downright suspicion when new approaches are initiated. The adversary relationship has been 150 years in the building — it cannot be torn down in 30 days or so. You have to be patient and advance one step at a time. The key to building is the involvement of people.

If we do establish effective communication on a two-way basis, if we do involve our people's minds as well as their hands in our business, if we're truly willing to have our people participate in our business and its decisions, if we devise methods to encourage employee commitment, if we back all of this with modern machinery and equipment, and if we devise methods of measurement and reward for true improvements, **then** we can expect to have a chance at growth and prosperity.

So — You Want to Initiate an Involvement Program

By Joe T. Gallegly

AUTHOR'S NOTE: The Monsanto-Greenwood plant is in the second year of PRIDE. This is a customized involvement concept created for their own special needs. Months of preplanning went into getting ready to change the way the plant is managed. This article provides some inputs for those who are considering an involvement concept such as Quality Circles or their own tailored concept. PRIDE is now on-going at Monsanto-Greenwood. The very high expectations of PRIDE are being exceeded.

Or do you? You might want to ask three questions about your organization first.

"What happens if we do?"

"Where will this involvement program lead?"

"What happens if we don't?"

These are difficult questions to answer and require much thought and soul searching. Each organization might consider taking a good look at its work environment. That's hard to do because we tend to look through rose colored glasses and not see what others feel.

You might view all employees on a continuum scale something like this:

LIP TIP HIP

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On the left are Low Interest People who may perform both a bit below and a bit above the minimum expected to remain employed. No doubt, when some were hired they brought with them a low interest in self and transferred this attitude to their job. Others have been turned off by the work environment and will just "keep on keeping on" until retirement. Some may have already "unofficially" retired but still show up for work every day and go through the motions of performing their duties. They tend to give lip service and lots of lip.

What happened to cause this low interest? If you search your soul, you just might find a number of occasions on which policy interpretations, lack of information, shoddy planning, or attitudes from "on high" were perceived as a turn off. The newly oriented worker just expects things to go smoothly, equipment to work and run well, answers to tough questions to be provided in a timely fashion, and managers to be accessible and available to recognize employees as individuals.

On the far right of our scale are the High Interest People (HIP), who, in the jargon of the '80's are very HIP. Some were nurtured at home, grew up that way, and fortunately came to work where you work. How lucky can you get? These people make it go. They get the work out; they do it right the first time; and they speak highly of you, the company, and others. They are indeed an asset. They often get rewarded with an "atta boy" or "atta gal" while more work is given to them. They smile, say thanks, and get on with their job.

Is it possible that a HIP remains that way in spite of the work environment rather than because of it? Just look at the performance extremes of people doing the same job for the same pay or, if in a pay range, the performance output of a HIP compared to a LIP.

Now, is "in spite of" the work environment, rather than "because of" too sharp a question? Recall your first day of work on your current job. Wasn't that a splendid time? High expectations! High hopes! What happened? Why? Didn't most people start out with job enthusiasm, then lose some of it?

The Typically Interested People (TIP) are the ones in the middle. At any time it is this large group that can literally tip the balance of how things will go. They, too, were HIP at one time and may on occasion return to this form. They also may join the LIP if events in the work environment create the wrong conditions.

All this leads to answering the question, "Why initiate an involvement concept?" The answer the Monsanto-Greenwood plant came up with is that it simply is the right thing to do. Yes, we have had many programs in the past to emphasize cost control, then quality, then efficiency, then . . . and the list is quite long. All had some impact that for a while was positive. Another program, another goal, another front office gimmick to boost production. But when the program was over and the jelly bean prizes were gone, where were we in cost control, quality, efficiency? Some better for sure, but not much better. Another front office program had faded into a final report and memory. Some had even been fun, some had even been exciting for a while, some even positive. Most, however, were costly and almost all were short lived. Isn't it amazing how interest wanes when the jelly beans are gone?

If we don't do anything any differently and manage the 1980's the way we did the 1960's and 1970's, then we will be putting "new wine in old skins." The newly oriented worker wants to be involved. He wants to help. He wants to use his mind and hands. He wants to help in planning. He wants to have a say in things that will impact on him. If he only had a chance! If only the right people would ask his opinion. If only the right people would actively listen. If only the right people would take the time to see what he feels.

If we don't involve him, and just "keep on keeping on," we could find ourselves efficiently producing buggy whip type products and services. We might be efficient, really efficient, but not effective. We might all go out of business just as surely as the horse and buggy passed from the scene.

Employees are people, and people are a resource! The whole person needs to be invited to become involved! As much as he can! As much as you can, and will, allow him. Not just his hands, but the whole person.

How should we go about getting employees involved? Why not install a "store bought" idea? It might work. But it might not work because what works at another plant might not fit your needs. Maybe you should customize a concept just to fit your special situation. It's worth the effort if you are planning to get to 1990 or the turn of the century profitably.

PRIDE

At Monsanto-Greenwood, it seemed appropriate to come up with a concept to impact positively on both productivity and quality of work life. It simply was the right thing to do. Is Monsanto-Greenwood's PRIDE the Quality Circle concept begun in Japan? Not quite, but that formula seems to work for some.

Our plant created the concept PRIDE to focus on productivity (PTY) and Quality of Work Life (QWL). Participation is voluntary and open to all employees. Participants are invited to attend an eight-hour (one-day) PRIDE information session. Class sizes range from 8-12. They are informal. A workbook and TV tape produced by the American Productivity Center in Houston, Texas, and coordinated through the Economic Resources Foundation in Columbia, South Carolina, are used. Additionally, two slide series are used to promote discussion of the causes of inflation and controlling job-related costs.

Class composition is made up of plant people from many levels — hourly, nonexempt, and exempt. Participants have no rank in this class — only different jobs.

The Plant Manager attends every session — not just to say "hello," but to set the stage for exchanging ideas and information. This is a massive commitment. Some may not be willing to make this kind of necessary commitment. Our Plant Manager was. It's been very effective. His commitment is seen and recognized within the plant. It grows and becomes contagious.

Near the end of the eight-hour PRIDE information session, participants are invited to join a PRIDE Circle. Additional training on identifying problems and developing solutions is made available. With the help of a PRIDE Coordinator (facilitator) who works full time, PRIDE Circles develop a list of priorities, come up with solutions, and recommend them to the PRIDE Action Team (PAT). PAT is composed of a very interested and committed person from each department. It operates like a Board of Directors which serves to aid, not control, the PRIDE Circle. Acceptance or rejection of a problem-solution is made by the manager of the area in which the problem-solution is being focused. To date, 8 of 10 PRIDE Circles have reported back to PAT with very successful results. Their recommendations have been accepted and they are in the process of putting the "fix" on something else.

What do they work on? Anything that will impact on PTY or QWL. Many more PRIDE Circles will soon be formed because the word is out that they're fun and interesting, and that we mean business about involving people.

Over 60 one-day PRIDE information sessions have been completed involving about 650 people. These one-day sessions are vertical: people from different levels attend at the same time. Yes, on some occasions even a boss and subordinate attend at the same time. The exchange is open, free, and constructive. Our concerns about a boss' and subordinate's attending together have evaporated. This tends to move us closer to an adult-adult relationship and away from the traditional parent-child relationship.

It's not all peaches and cream. Some managers may feel threatened by having lower level employees identify problems and recommend solutions. Likewise, some employees may sincerely think "it's not my job" to become involved and just "keep on keeping on." There is also the temptation for management to step in and "do for," rather than "work with," a PRIDE Circle and allow them to develop their own personality, pace, timing, and solutions.

The PRIDE concept requires a willingness and ability of managers to change the way they manage. It's tough to do, it tends to evolve slowly, and it takes long-term planning to achieve long-term positive impacts on PTY and QWL.

Some managers have seen PRIDE Circles as a means to help achieve team results. Some have been inspired to encourage PRIDE Circles to search for other problems. The process is ongoing.

THE FOUR C's

We see the four "C's" for success as being commitment, communications, credibility, and candor. See if you agree.

Commitment

This is essential from the top down. There is no other way. You can't delegate it. You must be willing to set the example and create the right environment. You must be willing to spend time in many meetings actively listening.

Communication

The quality of the communication, both written and spoken, is important. After you get their attention with posters, gimmicks, letters, and signs, you must be prepared to give business information willingly. You need not give away company secrets, but you should look at what is restricted and determine whether it should be.

Credibility

The gap between what is seen and what is told can be very wide. This is a perception (not necessarily a fact) that must be considered. How others see our actions creates the "us versus them" feeling. When it turns into "we," there is a good chance that credibility is better.

Candor

You must be willing to have no sacred cows. All issues, policies, procedures, and situations must be dealt with openly. We may not like explaining a decision but it must be perceived as right. Willingness to confront the tough issues that exist in any work environment is a must.

Where will all this lead? Frankly, we don't know. But we sincerely believe that this journey with PRIDE will continue to be very positive, long lasting, and rewarding, both for the company and the employees.

It seems right for Monsanto-Greenwood. It may or may not be right for you. The intent is to tell you, not sell you. We learn from recommendations turned down, and we build upon successes. As we learn, we grow.

Coming This Spring . . .

Our April issue will feature 7 articles and 2 columns on everything from automobiles to unsafe working conditions! In May, we'll be more specific and devote a whole issue to state financing!

South Carolina's Revolution of the 1980's

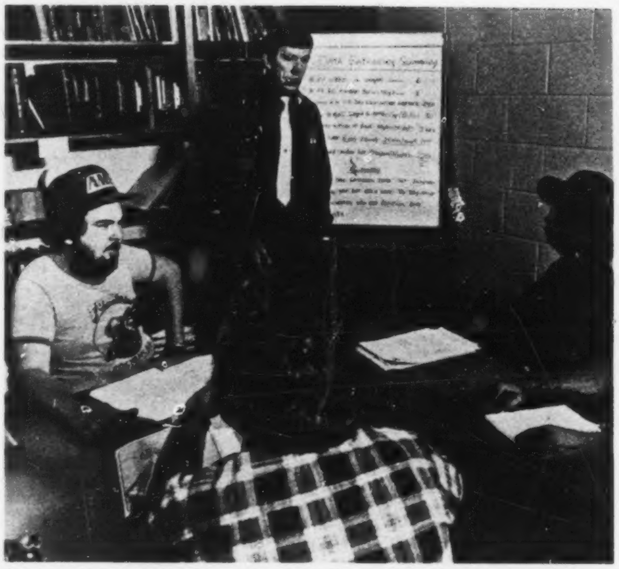
By Wade J. Palmer

It's happening now! And whether you are in the mainstream or standing on the shore, its outcome will definitely impact on both your work place and your personal life style!

What is it? It's a revolution, or, more properly, an evolution.

We are all aware of the shifting texture of our state's economic base, from agrarian domination through a booming textile industry to a more diverse general manufacturing and industrial profile. As Murphy would have it, though, the real growth potential and economic security that this shift would normally guarantee to South Carolina is being blunted by a down turn in national business economics driven largely by high inflation and declining productivity.

South Carolina is fortunate, but just how fortunate tends to be lost on all but the newest of this state's firms and managers. Our business environment, our quality of life, the positive work ethic of our people, our leadership in technical education, and similar factors too frequently are taken for granted. Only the dynamics that have occurred through the constant infusion of new blood into our business sector have minimized complacency. The real reminder, a rude shock to some native managers, was provided by the State Chamber of Commerce in their 1980/'81 issue of **South Carolina Business.** That publication's overview of our business climate, assets, and current issues sharply contrasted the growth potential with the economic challenge.



Management and workers meet at Charleston's Naval Shipyard.

There is a growing awareness that unless the challenge is accepted, our offspring may experience a standard of living significantly below that enjoyed by this generation — the first such decline in American history! Those prospects are as real as they are objectionable. We are too late to preclude some decline, but we can moderate and recover. The traditional weapons, however, are dated and inadequate. New strategies, attitudes, and philosophies must be combined with technology and patience to develop and sustain necessary change.

As bleak as it seems, the prospects are less frightening than they appear. At all levels and from all corners, South Carolinians are recalling their heritage. Native or transplant, they share a growing concern for declining productivity. After 300 years of progress and 200 years of freedom, they are once again the standard bearers for a revolution — from Governor Dick Riley's Council on Productivity and The Educational Resources Foundation's Productivity Task Force to the public and private sector, be they executives, educators, tradesmen, or clerks. They are more than merely concerned — they are dedicated and in motion,

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Wade J. Palmer is a Management Analyst with, and former Productivity Manager of, the Charleston Naval Shipyard. Having attended both the College of Charleston and The Citadel, he has had more than 15 years of industrial management experience, including 8 years in production management. Palmer has headed The Trident Productivity Exchange Steering Team since its development, and is a member of the South Carolina Educational Resources Foundation's Productivity Task Force. He is also a frequent speaker and lecturer on effective production control systems for application to heavy industry, and on the importance of understanding the work ethic in the '80's. Palmer is a Career Civil Servant with more than 24 years federal service.

actively moving toward individual and collective solutions.

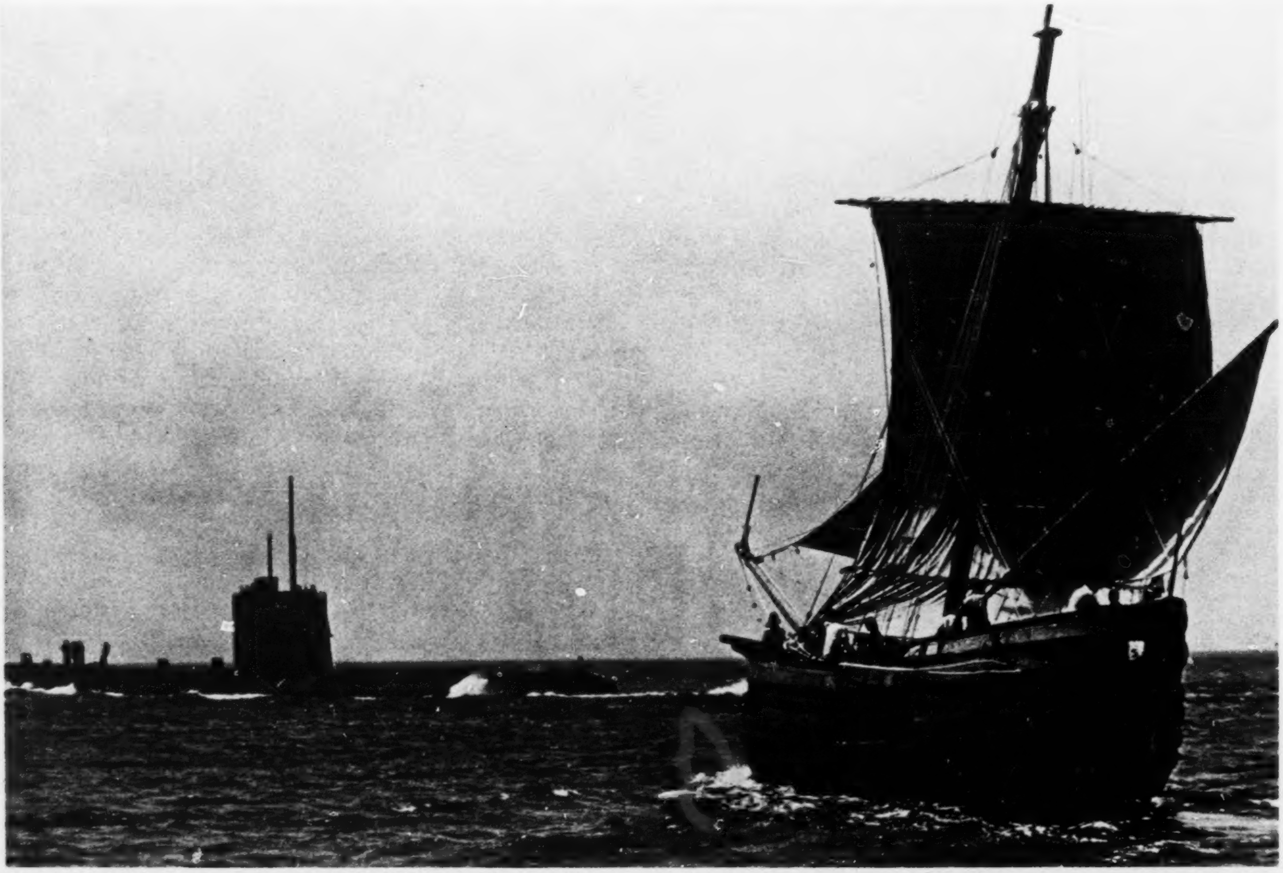
The members of the current revolutionary army somewhat resemble those of the 1770's. Their backgrounds, life styles, and economic and educational levels are diverse. Their dedication and activism, however, are the same.

The restraint of initiative and freedom that prompted the original revolution is once again the focus. This time, however, the source of restraint is not the heavy hand of a remote imperial entity. The current conflict is focused on the downward productive drivers that threaten the economic lifeblood of our nation — the desire and ability to compete freely and effectively in the international market place.

In the South Carolina Low Country, a prominent group of modern day citizen-soldiers, acting as private individuals and as representatives of more than 50 South Carolina institutions, have come together with the Council on Productivity and The Productivity Task Force in their recognition of the challenge. They are The Trident Productivity Exchange, and their arena is the business environment and problems unique to their constituency.

Under the general sponsorship of the Trident Chamber of Commerce, The Trident Productivity Exchange is chartered to provide a community resource for addressing the issues confronting both worker and management levels in their efforts to improve productivity in the work place. The Productivity Exchange charter reads like a call to arms.

> It shall be the mission of The [Trident] Productivity Exchange to focus attention on productivity and the resultant impact [on] the general economy and quality of life; to promote and enhance concomitant efforts for alteration and development of public policy, community awareness, and associated actions to establish an environment that is conducive to improving productivity in the work place;



The past and the present cross paths in Charleston Harbor. If corporate America is to survive, they must also meet in the Board Room. (Photo courtesy of Advertising Service Agency, Inc.)

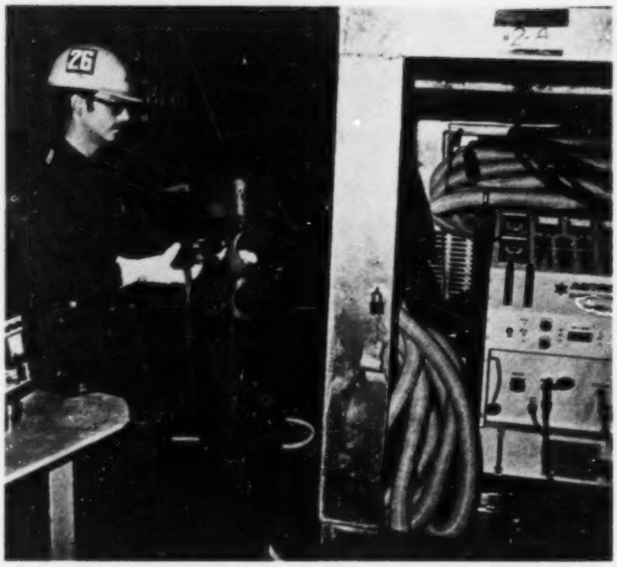
and through the execution of this charter, [to] provide process experience to the membership in the techniques that are demonstrated to be effective in improving productivity, quality of life, and/or constructive involvement.

Drawing membership from all sectors of the business, education, and governmental communit[ies] that [are] composed generally of the South Carolina counties of Berkeley, Charleston, and Dorchester, it is the intent of this productivity exchange to have a major influence in promoting the effective and efficient use of all available resources, including, but not limited to, facilities, personnel, finance, material, energy, transportation, education, and communications.

The Productivity Exchange recognizes both that a direct, interdependent relationship exists between education, government, and private industry and that the health of the community, its government, and its educational entities is dependent on the health of the private sector economy. In this recognition, The Productivity Exchange is dedicated to providing resources to the total membership primarily and the community in general in the form of promotion, training, research, information exchange, consultant service, and other programs that are consistent with the target of improving productivity and as the membership shall deem appropriate.

With PRODUCTIVITY the popularly misused and overworked buzz word, The Productivity Exchange is not the sacrosanct assemblage their charter and mission statement might imply. The essence and emphasis of the group is best illustrated by the shortened name "The Exchange" by which the members refer to their organization. In practice, The Exchange is a consortium of productivity conscious practitioners who have pooled their talents and resources to share with other practitioners their philosophies, techniques, and experiences in the broad and literal arena of self-education for improved productivity.

Carefully and deliberately structured, the tactics employed are as unique today as the guerrilla tactics of Francis Marion were in 1776. Typical are the abandonment of traditional hierarchal organizational structure, and the willingness for open discussion, not only of the successes that were heretofore protected to maintain a competitive edge but also the failures that normally were relegated to obscurity.



The new challenge: how to tap the resources of "The Experts"!

Founded in late 1980, and drawing membership from the entire cross section of the local business community, federal and local governments, and primary and secondary educational institutions, The Exchange recognizes that ultimate effectiveness can best be achieved by weaving effective productivity techniques into the organizational process. (Hence the charter statement ". . . provide process experience to the membership in the techniques that are demonstrated to be effective in improving productivity, quality of life, and/or constructive involvement.")

The Exchange currently employs techniques for group dynamics and team management in its organization process. Since membership is completely voluntary, each member can elect involvement to the extent, and in the functional area, that best matches his needs and desires. Conceptually, a steering team coordinates the administration of the association with other ad hoc teams dedicated to membership, promotion, and projects or programs.

In 1981, The Exchange attempted to reach beyond the level of delivery that its new stature and low profile would support and produced a dynamic symposium for community consumption. While the program itself was more than adequate and of high quality, the source was an unknown entity. Thus, despite coverage of topics the constituents had indicated by various surveys to be the most desired, the necessity for careful timing and broad credibility and acceptance were immediate and hard lessons.

Growing on that experience, a more patient program was adopted by The Exchange for 1982. This program will concentrate more on self-education and direct internal exchanges through open but unadvertised special topic seminars and facility visitation programs. The seminars will draw on resources both from within and without to present, discuss, and/or critique techniques of broad interest to the general membership. The visitation program will provide opportunities to small segments of the association to observe productivity enhancing techniques and programs in a host plant or organization where they are actually in use, and to discuss the philosophy and impact of that system directly with the managers and other personnel involved. The delivery of "outreach" type programs will be attempted only to the extent a resource is available from within The Exchange membership that may lend assistance to other more established community, business, and professional associations. Resources are available in the form of general and special topic speakers with firsthand experience in managing successful productivity improvement programs. To a more limited degree, assistance is available from The Exchange in the form of cooperative research and program cosponsorship.

At present, The Exchange focus and emphasis are in three program areas which are believed to be the most urgent for Low Country managers today. They are managerial awareness and acceptance that **people** are the most effective and logical resource through which to influence productivity; the development of effective and efficient means to measure white-collar productivity; and the enhancement of both "humanism" and modernization in the "front office."

From quality of working life to the office of the future, the consensus view of The Exchange is that practioners can learn best from other practioners. This is not to belittle the role of consultants, for they offer a constructive contribution to the assault. Rather, the view stems from a dual appreciation that the process for change must be conceived from within and that growth is limited by credibility and reservation. For the latter appreciation, other practicing managers within the respective business community, who have dealt with similar restraints, obstacles, and attitudes are an invaluable resource. They have a common language by which a quantum advance may be achieved on the learning curve of someone else's experience. Direct interchange also minimizes translation and interpretation losses.

In the history of this country, the biggest lesson we have gained from experience is that we tend to learn little by experience. That process is now changing. The growing incentives spawned by dwindling profits and heavy competition are making us better students. In South Carolina, the 1770's precedent for conceding the loss of the coastal area is unacceptable to The Exchange members. They will not allow it to be repeated.

Work Management Systems: One of the Alternatives

By James E. Snakenberg, Jr. and Jerry H. Holmes

INTRODUCTION

In today's environment of escalating costs and short supplies of skilled labor, management is under increased pressure to find ways of carrying out business more effectively. Simply put, the productivity problem touches every organization, including public utilities.

To understand the management challenge at an electric utility, such as Carolina Power & Light, one must first recognize the diverse nature of the business: it is, in one, a major construction, an engineering and design, a continuous process, an electric distribution, and a retail industry. Yet, like all businesses — small or large, simple or complex — utilities must press continually to improve services and reduce costs.

Productivity can be defined in many ways, but it is safe to say that it is associated with outputs compared to inputs. Going further, if outputs, somehow measured, are increased while inputs, such as labor, are kept the same, productivity and unit labor costs will be improved.

The catch in achieving this improvement has to do with measuring. Some things can be counted with relative ease. Services, however, are difficult to compute. Indeed, it is sometimes difficult even to agree on the exact product being provided.

Historically, manufacturing industries have looked to industrial engineers to develop the measures and means of improving efficiency at the "man-machine interface." That challenge was met: the component parts of the production process were identified and analyzed and production became more efficient.

The tremendous growth of the service sector in our economy — banking, hospitals, information processing, government, and utilities — however, presents a new management challenge. Today, most workers are not involved in direct production. In fact, if great strides are to be made in improving national productivity, significant progress will have to be made in those settings in which output is difficult to measure.

As it turns out, some of the tried and proven methods of industrial engineering can be adapted to meet the management challenge in the service sector. The correlation between the shift of the work force to service functions and lower productivity also suggests a fertile area for research on ways to handle the current dilemma.

ANALYZING THE WORK PROCESS

The measurement of worker contribution to service output many times requires a statistical analysis of historic data. To get these measures, one must design a work management program, which may involve the synthesis of work sampling, time study, and statistical regression analysis. In any case, the result obtained must be accepted as a true representation of the work that should be required to produce a certain level of service. In other words, the result must be believable and consistently accurate.

In achieving some level of service, or quality of service, activities or related outputs generally can be found that explain the various levels. Thus, defining those activities and parameters in a countable and independent fashion is the first, and often the most difficult, part of designing a successful program. Care must be taken in the design of the system so the significant variables (activities) are taken into account.

At the outset, the analyst must define carefully what is being produced, or the output, and the number of people required for that production. What the analyst does not know precisely is how the two are linked. Unlike a production process in which one can see machine operators who control a definite part of a process, other workers who deliver components to the work location, and still others who remove the output, service activities tend to be very foggy at the production interface. There is no apparent structure, and methods take on a random, statistical type pattern depending on what is occurring at a given moment. Multivariable regression analysis allows the analyst to set up certain activities as being associated with some measured output. Once the statistical work is done, it is possible to see a quantitative relationship between each of the input activities and the output results.

Since the analysis reflects service work performed in an environment where the activities are relatively uncontrolled, it is expected that the measures obtained will not be exact. Instead, the analyst obtains an "expected" or average measure of the relationship between each specified activity and its resulting output. Some workers, for example, may do better than the predicted level of service, while others may do worse. This characteristic of service work measurement makes the approach most useful for scheduling and manpower planning, and least useful for performance measurement. Put differently, the result is "how much labor is expected to be required for a given level of service" as opposed to "how much labor is required."

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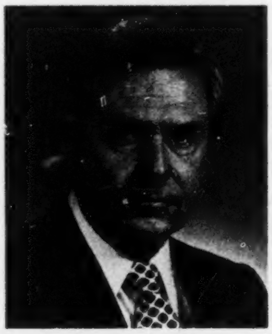


Jerry H. Holmes is a Project Industrial Engineer in the Work Force Performance Development Section of Carolina Power & Light Company. A graduate of Mercer University, he has also been associated with Industrial Engineering and Work Management programs for Union Carbide Corporation and Reliance Electric Corporation. Holmes is a Senior Member of the American Institute of Engineers and President Elect of Chapter 66. He has served in several Chapter capacities, and was named "Outstanding Practicing Industrial Engineer for 1980" by Chapter 66.

Although the work management system aids managers in improving work schedules and plans, and thus improves productivity, the system does not measure productivity directly. Rearrangement of the underlying activities associated with some services can be simulated by the method, however, and a comparison drawn between various approaches to a particular service goal.

Sometimes the analyst learns as much by developing the work management system as might be gained by implementing it. Roadblocks to improve productivity should be identified; and waiting periods, delays, and other activities that benefit neither the worker nor the customer lifted up for management and worker solution.

Once a work measurement program has been completed, the measures can be put together in an output report that periodically targets areas where production is not what management expected. Standard industrial engineering methods such as methods improvements, process flow analysis, and queuing analysis can be applied to solve the problems identified. Employee group problem solving techniques, such as Quality Circles, may be useful in taking this step. Simply put, the standard approaches for improving production in the manufacturing arena are emerging and can be applied in the area of "unmeasurable" service work.

It should be kept in mind that no system for measuring work or improving it can replace skilled managers. It is also difficult to transplant a system that has worked in one organization or department to another area and expect immediate and beneficial results. Each individual group's knowledge about its work must be drawn into the problem's solution. Along with this untapped storehouse of ideas can be added assistance from local state universities. With this combination, the solution to improved work force performance may be closer than you think.

METER READING WORK MEASUREMENT: AN APPLICATION

To illustrate the application of the work measurement approach, consider a project developed and implemented at Carolina Power & Light Company that relates to the activities of 177 meter readers and 650,000 accounts across the firm. The primary objective of the project was to provide a management tool for monitoring the growth of the individual routes and for assuring work load balance when rerouting was required. A secondary objective was that the resulting system operate with little or no daily input of information by field personnel.

The work measurement associated with the system identified two types of standards — constants and variables. Constant standards included activities of a "make ready" and "personal" nature that are necessary to the meter reading activity but not directly related to the act of reading a meter. Examples of these are office activity and travel and rest breaks.

Variable standards covered the time required to read a single meter, record the data, and travel to the next meter location. These are based on the average distance between meters and the percentage ot the more complex meters, i.e., those that record demand, located on a route.

Once the constant and variable standard activities were analyzed in terms of their relationship to meters read, estimates of each activity enable management to begin applying the work management system. Implementation of the system required the field offices to apply the standards to each route and account. As routes were changed and accounts added or deleted, the system automatically adjusted the requirements for achieving the work performance goal. It is important to recognize that individual meter readers were not required to accumulate any data about the changes. Transactions by area office clerks in the normal course of handling customer connections provided all the necessary input.

Area offices provided three items of additional information to the central office when a route was revised: the average distance from meter to meter on the new route, the percentage of demand meters on the new route, and the distances to the first meter and back from the last meter. From this information, the central office generates quarterly reports that indicate the standard work load for reading each route.

Subsequent work on the project has produced two other benefits. One was the development of a manpower planning model based on the application of the results of the work measurement system. The other was the introduction of improvements in the rerouting procedures.

The manpower planning model is completely automated and can be used to generate support data for the annual budgeting process. Its features include the ability to handle vacations and holidays, typical absenteeism experience, training and information meetings, meter reading schedules, and man-hours of reading time required. Computer generated graphs and data are produced that project the number of man-hours required to perform all direct and indirect activities for the budget year. The information provided also identifies peak work loads and estimates of future staffing problems.

CONCLUSIONS

Carolina Power & Light Company's experience has shown that the development and use of work management systems can be a valuable exercise for management in conducting business more efficiently. When the work management approach for planning and scheduling is included with other productivity enhancing management tools, such as management development training, materials handling management, and craft training, the goals of the firm can be achieved at lower cost to the customer.

Finally, the future use of desk top minicomputers in large and small firms will bring the day when work management systems and mathematical scheduling methods become standard operating procedures. As we have learned at Carolina Power & Light Company, the myth that indirect labor is unmeasurable is already beginning to fade.

Robotics: South Carolina Cog in Steel Collar Revolution

By John W. Arrington IV

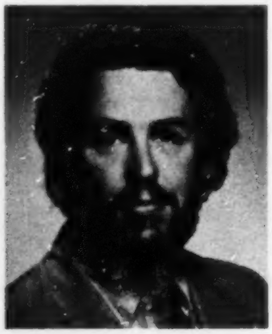
They never call in sick. They never take coffee breaks. They never get bored. They don't mind heat or dust or strong chemicals. They can work 24 hours a day. They don't require medical insurance or retirement plans. They are efficient. They reduce waste. They produce excellent quality.

This description fits (1) your workforce, (2) the workforce you wish you had, (3) robots.

You probably answered both (2) and (3). And chances are good, if you operate a manufacturing concern in South Carolina or any other state, the day has arrived when robots can be a realistic answer to some of your labor problems.

As the news media have proclaimed vigorously lately, the age of robotics is upon us. With it comes a new and peculiar set of questions.

What is a robot?



John W. Arrington IV is Corporate Communications Manager of Riegel Textile Corporation, Greenville. He earned a B.A. Degree in History at Presbyterian College. Arrington joined Riegel in March 1980 after serving as a consultant for the company the previous year.

If you are hoping a robot is a humanlike machine that will zoom around your house answering the telephone, washing dishes, vacuuming the carpet, changing the channels of the television set, and walking the dog, then you will be disappointed. If, on the other hand, you are hoping a robot is a machine that can do jobs too dangerous, too boring, or otherwise unappealing for human beings, and save you money in the process, then welcome to 1982.

It is not that the sophisticated household robot is beyond the imagination of the robot designers of today. The problem is that the home robot would have to be 10 times more sophisticated than the industrial robot, at one-tenth the cost. In this day of two-career families, though, the day of the household robot may be here sooner than you think.

According to the Robot Institute of America, "A robot is a reprogrammable, multifunctional manipulator designed to move material, parts, tools, or specialized devices through variable programmed motions for the performance of a variety of tasks." Webster has a vastly different definition, and one that more closely meets the expectations of the common citizen when he hears the word robot. To Webster, a robot is "a machine that looks like a human being and performs various complex acts (of walking and talking) of a human being. Also, a similar but fictional machine whose lack of capacity for human emotions is often emphasized."

"People expect a robot to be able to do anything," says Joe Gaynor, Field Sales Engineer with the Industrial Robot Division of Cincinnati Milacron.

> They are looking for an R2D2 that walks around doing whatever it is asked. This is not what we at Cincinnati Milacron make. It is an extremely capable machine but it is not a panacea.

What can industrial robots do? They can weld, forge, handle materials, spray paint, cast dies, load machines, and inspect auto bodies. They can retrieve objects and make repairs underwater. They can scrape the grime off the space shuttle.

Automation may have you thinking you already know of many uses of robots or are using them yourself. The key is in the definition. Unless the machine is reprogrammable for other tasks besides the one it is doing, it cannot be classified as a robot.

Figures on the numbers of robots being used across the industrial world vary widely, mainly because of this definition. According to the Japanese Robot Association, Japan has 75,000 operating robots, compared to 3,700 in the United States, 1,200 in Sweden, 1,133 in West Germany, 400 in Italy, and 371 in Great Britain.[1] But these numbers differ vastly from other counts, which put the Japanese figure more around 10,000.[2]

> Gaynor says, the difference is that the Japanese use a different definition. Much of what they consider robotics is what we classify as automation. Comparing apples to apples, the Japanese are probably closer to the 10,000 figure. They are slightly ahead of us.

The decade of the 1980's has already been tagged as the decade of this cause and that movement, but at the risk of saying "me, too," this will undoubtedly be a decade of remarkable change in the use of robots in manufacturing and in our everyday lives. "Robots are revolutionizing manufacturing," states Gaynor. "They may have as great an influence as the introduction of the assembly line."

Most all the experts agree that this "steel collar" revolution has come about because of the much discussed decline in American productivity. From 1947 to 1965, United States productivity increased by 3.4 percent per year. In the following 10 years it fell to 2.3 percent. By the late 1970's, it had hit the skids and was less than 1 percent.[3]

During those same years, two changes made the robot of today feasible, when before it had been impractical. The first was the development of the microprocessor, the computer so small it could be fitted onto a silicon chip the size of the nail on your little finger. This innovation made available the brains to run the robot.

The second development was not a sudden one. It was the gradual escalation of wages, to the point where robots made economic sense for manufacturers, large and small. When the cost of employing a human being exceeded the cost of using a robot, the robot industry was born.

General Motors led the movement over 10 years ago, when it purchased 50 welding robots. GM now has over 270 at work, mainly welding car bodies.[4]

Gaynor ranked the order of uses of robots at work in the United States today as welding first, then arc welding, material handling, and machine loading.

There are two basic types of technology, he explains: servo-controlled and nonservo-controlled. Nonservo-controlled robots operate from one unit to another, i.e., sort of "bang bang" or "pick and place" robots that repeat a back and forth motion. They operate on air or oil power. Servo-controlled robots can start, stop, and restart anywhere in their operating path. They are powered hydraulically and can accelerate and decelerate according to program.

A robot's closest comparison to a human comes in the name of its parts. To achieve its multiple axes of motion, it has a shoulder, an arm, an elbow, and a wrist, allowing it to reach any point within its plane of operation.

When you look for applications for robotics, advises Les Ottinger, President of Robot Systems, an Atlanta firm specialized in helping companies use robots, you first look for any place a worker is buffered against the working environment. Where a person is wearing any form of protection, whether it be gloves, earplugs, masks, protective clothing, or safety glasses, there may be an application for a robot, says Ottinger. Another thing to look for is an uncomfortable physical attitude by a worker, such as twisting to reach inside of an object to perform a task.

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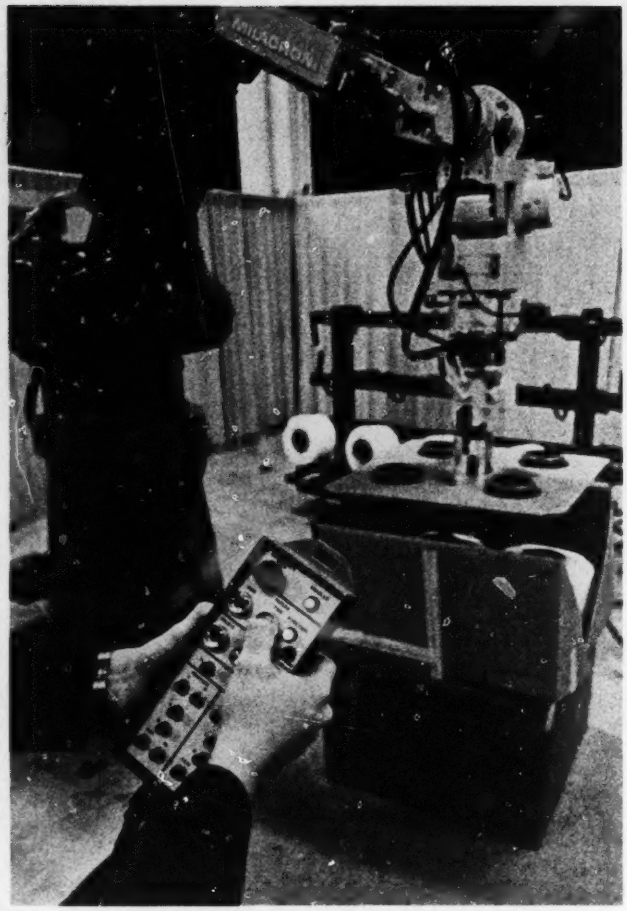
[1] "Robots March On," **Parade** (11 October 1981).

[2] "The Robot Revolution," **Time** (8 December 1980).

[3] Ibid.

[4] Ibid.



Cincinnati Milacron's T3 robot. The control keyboard in the foreground is used for teaching the task. Once taught, this sophisticated robot will repeat the task the same way until told otherwise.

In addition to the increased productivity, reduced waste, and improved quality provided by the robot, a manufacturer can also stop spending money on protective equipment such as gloves and masks. OSHA does not require an employer to protect the health of a robot . . .

"Removing workers from dangerous jobs can do great things for worker safety," says Ottinger. In this era of concern with worker safety, the use of robots can be predicted to increase for safety reasons alone.

But what about people? How does it feel to be replaced by this bucket of bolts who can do your job the first day better than you could after 15 years, and doesn't even want two weeks off in the summer? These cries of protest have risen in direct proportion to the rise of robotics.

The most frequently heard answer echoes the productivity argument. Improved productivity creates new jobs. At General Electric, for example, every plant where an effort has been made to use robots has more people working in it than before the effort started, says Vern Estes, Manager for heavy industrial robotics applications for General Electric.

Estes estimates the average life of a modern robot at 40,000 hours, which comes to 1,000 weeks based on 40 hours a week. Of course, in many applications, it makes sense to run the robot for more than 40 hours a week. They never complain.

They do, however, break down. After all, a robot is still a machine that requires maintenance and will wear out. But, according to Estes and others, their reliability is excellent. Most experts agree that 95 percent is a conservative figure for their work performance on the job.

Joe Gaynor says the robots of Cincinnati Milacron now average greater than 98 percent up time. Usually, the only down time is when the robot is being programmed.

The average United States worker, according to James Baker of G.E.,

> is actually productive for less than 50 percent of the time he spends on the job. And he's not hanging around the water cooler either. He's waiting for orders, he's waiting for someone to do something to a part so he can work on it, he's waiting while a broken tool is fixed.[5]

In any new industry, there will be a flood of companies battling for their share of the market. Such will be the case for the robot industry, says Ottinger.

Comparing the rise of the robot industry to that of the automobile industry, Ottinger points out that the robot industry will have its share of Packards and Studebakers, its Oldsmobiles, Fords, and GM's. It will have new contenders who will rise and fall as well as new product lines to force product line changes by the big three. According to Ottinger,

> There will be a sifting out and consolidating over the next 10 years. There will be the elaborately finned, ornamented big engine robots and there will be the compacts. There will be robots with dashboards that sparkle, flash, and provide visual excitement; and there will be the inexpensive pickup truck versions that last forever and do unbelievable amounts of work for their cost.

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[5] "Robots Leave the World of Sci-Fi and Enter Graphic Communications," **Graphics Arts Monthly** (August 1981).

News coverage of the robotics movement has centered on the more sophisticated robots, the expensive and glamorous ones. The unfortunate thing is that many potential users live in the harsh realities of unsophisticated plants and cannot imagine how they can use those high technology, gleaming, computer controlled robots.

These are the people who need to be shown the products on the market today, says Ottinger. They need to be shown that despite sometimes high initial cost, robots can save them money.

"Where they really need help is in seeing applications," he says. "Without an awareness of robot technology, one cannot walk into that same plant that is so familiar, and see the possibilities for using robots."

In much the same way a worker uses his hands to accomplish a multitude of tasks, a basic robot can have a variety of tools attached to its wrist. It can hold and operate a drill, screwdriver, hammer, paint sprayer, or welding torch, to name a few. It can also be equipped with customized gripping devices that enable it to grasp and manipulate an object. Designers are working on robots that have an actual sense of touch, and even sight.

Getting a robot to do what you want it to do is not complicated, says Gaynor. Through controlling the motions of the robot with a keyboard and accomplishing the desired task, the robot is "taught."

This is called **teaching,** not **programming.** The robot can then repeat the task until you tell it otherwise. Thanks to variable speeds, the robot can be taught at a slow speed and then work at a much faster rate.

The teaching of the robot is crucial, says Gaynor. After all, a robot taught sloppily will perform that way every single time. But repeatability is really the advantage of robots.

Ideally, says Gaynor, a skilled person, a knowledgeable person does the teaching of a critical job, like welding. That person knows a good weld when he makes one and can give the robot the benefit of his years of experience in the time it takes to do the job right one time. The robot then goes on and repeats that quality weld again and again, whether it be Monday morning or Friday afternoon.

Currently, two companies are vying for first place in robot sales. One is Unimation, Inc. of Danbury, Connecticut, and the other is Cincinnati Milacron. Most notable to South Carolinians is Cincinnati Milacron, which Gaynor claims now is first in robot production.

What makes the company important to this state is their new plant in Greenwood, where Milacron produces every robot it makes. According to Ted Mauser, Plant Manager, the company chose Greenwood after a relocation consultant recommended the Piedmont area of North and South Carolina. Greenwood and South Carolina offered the company what it was looking for in terms of quality of life and growth potential, says Mauser.

The growth of the robot industry, or more specifically one company in the industry, is evident in Greenwood. The plant opened in May 1980 with 50,000 square feet of production space. Before they had reached full production in August 1980, an expansion had been authorized. Since then, a second expansion has been ok'd. By the end of February 1982, the plant had reached 100,000 square feet.

Current employment in the Greenwood plant is about 220. Will it get bigger? "We have great expectations," says Gaynor. So much so that one wall is being built so it can be easily removed for further expansions.

Asked about Milacron's marketing efforts, Gaynor indicated its biggest task is responding to inquiries, a growing job. More and more companies are asking for information. "Those who are serious will follow up our contact, and we will pay them a visit to determine their needs and how we can help meet them." Much to Gaynor's pleasure, the machines are being sold long before they are made.

Milacron's basic robot sells for $66,800, says Gaynor. The average invoice of the robot equipped for its job is more like $77,000. And the payback?

If a plant working three shifts has an annual cost per worker year of $25,000 (salary and benefits), the robot displacing these three workers will pay for itself in less than one year. Gaynor hastens to point out that he uses the word "displace." "We like to say it displaces a person to another job, not replaces him altogether." Robots are not machines left alone to work all night in the dark while the boss is home sleeping. There is much going on around the robot that requires human attention. Inspections must be made, supplies must be maintained, and much more. It may take 1 person where before it took 10, but that 1 person is critical.

Will American industry use robots? "Whether we automate or not," Gaynor concludes, "we know the competition will." Undoubtedly, American industry has only scratched the surface in the use of robots. Their ability to improve productivity and keep humans out of dangerous jobs offers enormous rewards for individual companies and the nation as a whole.

Managing the changes that will result from the "steel collar" revolution is the challenge of American industry and society. That is a job the robot **cannot** handle!

The Productivity Task Force

By Virginia Ann Van Seters

The Educational Resources Foundation (ERF) is a 501-C-3 nonprofit educational organization chartered in 1964. The foundation is governed by a Board of Trustees that employs a small staff. The foundation creates, produces, and distributes media-based educational resources used primarily by organizations in internal employee development activities. While the efforts of the foundation are directed primarily toward South Carolina needs and organizations, many of its educational resources are also used by organizations outside the Palmetto State. This expanded marketing and utilization make it possible for the foundation to generate sufficient revenue to produce high quality media-based educational materials.

In August 1980, the ERF board decided to form The Productivity Task Force to help concentrate attention on the need for improved productivity within South Carolina. On November 18, The Task Force had its initial meeting. Joseph T. Allmon, Vice-President of Riegel Textile in Greenville and immediate past Chairman of the ERF Board of Trustees, accepted the board's request to chair the Task Force. Serving with Allmon were:

Harry G. Fleming
Vice-President and General Manager
American Koyo Bearing Manufacturing Company
Orangeburg
(original appointee who has since resigned)

Dr. James F. Kane,
Dean
College of Business Administration
The University of South Carolina
Columbia

Walter H. Kneece, Jr.,
General Manager/Residence
Southern Bell
Columbia
(appointed to fill Fleming's vacancy)

Wade J. Palmer,
Management Analyst
Charleston Naval Shipyard
Charleston

Dr. Jack A. Powers,
Coordinator of Innovative Technical Training
State Board for Technical and Comprehensive Education
Columbia

Roland O. Rabon, Sr.,
Special Assistant to the Executive Director
South Carolina Budget and Control Board
Columbia

Lowell Reese,
Executive Vice-President
South Carolina Chamber of Commerce
Columbia

John J. Schroeder,
Vice-President Personnel Management
Daniel International Corporation
Greenville

Alvin J. Sill,
Plant Manager
E.I. DuPont
Charleston

C. J. Turner,
Division Vice-President
Carolina Power & Light
Florence

R. E. West,
Director of Management Training
Milliken & Co., Inc.
Spartanburg

Richard W. Wolke,
Plant Manager
General Electric Co.
Florence

Dr. Bruce Yandle,
Professor of Economics
Department of Economics
Clemson University
Clemson

William L. Yates,
Executive Director
South Carolina Hospital Association
West Columbia

The Task Force determined the following to be its mission:

to focus attention on the alarming drop in national productivity,

to educate/develop improved awareness among the citizens of South Carolina of the effects of declining productivity on the standards of living in the state.

to promote programs to assist organizations in identifying the factors critical to productivity and in improving productivity in each vital area, and

to operate a clearinghouse on productivity programs and activities in South Carolina.

Principal projects of The Task Force to date are discussed very briefly below.

1. The Task Force and the American Productivity Center presented a two-day workshop for managers on productivity improvement, "Planning, Managing, and Measuring." The workshop was attended by 25 participants and was one that the American Productivity Center presents nationally.
2. The Task Force, The South Carolina Productivity Council, the South Carolina Chamber of Commerce, the South Carolina Council on Economic Education, and The Trident Productivity Exchange sponsored a very successful productivity briefing conference for senior executives of South Carolina. Over 125 people attended this one-day session which featured presentations by Governor Riley; Richard A. Jacobs, Kearney: Management Consultants, Chicago; the U.S. Departments of Commerce and Energy; and the American Productivity Center, Houston. Based on the success of this meeting, The Task Force has decided to make the conference an annual affair.
3. The Task Force broadcast statewide over ETV a 90-minute special program "Productivity: Success for the '80's." This program featured eight organizations' innovative approaches to productivity improvement. The final portion of the program utilized telephone call-ins to a panel made up of managers from several of the organizations featured and Productivity Council Chairman Erwin Maddrey.
4. Working with the College of Business Administration at The University of South Carolina, The Task Force has developed the articles published in this issue of the **Business and Economic Review.**

Funds for The Productivity Task Force are provided by the Educational Resources Foundation and tax-deductible contributions from private organizations. The ERF trustees are currently soliciting contributions and will appreciate any assistance provided by the readers of this magazine. According to Task Force Chairman Allmon,

> the mission of the organization is to raise the visibility of the need for productivity improvement in both the private and public sectors in South Carolina, as well as to pursue the larger opportunity to facilitate the exchange of information about productivity improvement among the state's businesses and institutions. The Task Force members have been very active in planning and carrying out activities. It is their wish to be able to develop new opportunities for service.

For more information on The Productivity Task Force, contact W. D. "Dick" Robinson, Jr., Executive Director, at 254-0326.

Miss Virginia Ann Van Seters is Associate Editor for the Division of Research and Editor of the Faculty-Staff Newsletter in the College of Business Administration, The University of South Carolina. An honor graduate of USC's College of Journalism, Miss Van Seters has won numerous professional awards. Prior to joining the staff of the College of Business Administration, she also worked in legislative reporting and public relations.

The Management Bookshelf

By Dwight Gardner, Business Librarian, M.B.A., M.S.L.S.

The Management Bookshelf is a service to our readers provided by the Elliott White Springs Library of the College of Business Administration of The University of South Carolina.

HOW TO BORROW MONEY

by Oliver G. Wood, and William C. Barksdale, Jr.
Van Nostrand Reinhold Co.
135 West 50th Street
New York, NY 10020
1981, 145 pp., $13.95

This practical guide is designed to supply the expertise needed to borrow money successfully. It covers the entire borrowing process: how to determine how much to ask for, where to find the major sources of money, how to apply for a loan, how the lender will process the application, what happens at the closing, and how to pay back the loan. The nontechnical language of the text allows even the layperson to benefit from the authors' advice.

THE NEW MANAGER'S GUIDE TO SUCCESS

by James R. Baehler
Praeger Publishers
521 Fifth Ave.
New York, NY 10175
1980, 160 pp., $19.95

This book provides practical guidance for both the novice and the experienced manager on acquiring those management skills needed to function effectively. It gives the theory and applications of managerial concepts as they apply to the everyday problems the manager will encounter.

BARRIERS TO CORPORATE GROWTH

by Barry D. Baysinger, Rodger E. Meiners, and Carl P. Zeithaml
Lexington Books
125 Spring St.
Lexington, MA 02173
1981, 144 pp., $15.95

The authors examine the problems blocking the development of today's small firms. They identify and discuss the different types of barriers to growth, analyze the government's role, and provide an overview of the concept and planning of growth.

THE NEW INFLATION: THE COLLAPSE OF FREE MARKETS

by W. David Slawson
Princeton University Press
Box BBBB
Princeton, NJ 08540
1981, 464 pp., $16.50

The author offers a new theory to explain inflation. He contends that inflation is caused by changes in the nature of competition and the growth of pricing institutions, and not by excess demand as in more traditional economic theory. He argues inflation will not be cured by balancing the federal budget, but by instituting a new variety of wage and price controls.

A GUIDE FOR USING THE FOREIGN EXCHANGE MARKET

by Townsend Walker
John Wiley and Sons
605 Third Ave.
New York, NY 10016
1981, 381 pp., $23.95

Walker provides a guide to operating in the exchange and international money markets. He explains the techniques and tools used to analyze market conditions, and demonstrates how to reduce foreign exchange risks at minimum cost to the firm.

ART OF BEING AN EXECUTIVE

by Louis B. Lundborg
Free Press
866 Third Ave.
New York, NY 10022
1981, 270 pp., $15.95

In this book the author, a former chairman of the Bank of America, sets forth his personal philosophy of management. He utilizes a question and answer format in presenting his ideas. He emphasizes the human side of management, including anecdotes from his long career.

* * *

Readers are invited to submit titles of books that they wish to call to the attention of others.

STATISTICAL INDICATORS OF SOUTH CAROLINA BUSINESS

ITEMS	November 1981	November 1980	Latest Month Percentage Change from Year Ago
Total Bank Deposits ($ millions)[f]	$ 5,690.3	$ 5,585.5	+ 1.9
Demand	2,297.7	2,685.2	- 14.4
Time	3,392.6	2,900.3	+ 17.0
Total Bank Loans ($ millions)	NA	NA	—
Savings in Savings and Loan Associations ($ millions)[b]	5,721.6	5,452.0	+ 4.9
Sales and Use Tax Collections ($ thousands)	46,068.1	45,297.9	+ 1.7
Labor Market:			
Civilian Labor Force (thousands)	1,337.0	1,304.3	+ 2.5
Employment	1,215.3	1,211.2	a
Rate of Unemployment (percentage)[c]	9.1	6.9	+ 31.9
Nonfarm Wage and Salary Employment (in thousands)[c]	1,190.1	1,192.5	a
Manufacturing[c]	385.5	390.6	- 1.3
Contract Construction[c]	66.9	72.0	- 7.1
Transportation and Public Utilities[c]	55.4	54.5	+ 1.7
Wholesale and Retail Trade[c]	229.4	224.9	+ 2.0
Finance, Insurance, and Real Estate[c]	49.3	47.7	+ 3.4
Services, Mining, and Miscellaneous[c]	164.7	159.6	+ 3.2
Government[c]	238.9	243.2	- 1.8
Average Hourly Earnings, All Manufacturing (in dollars)	$ 6.33	$ 5.78	+ 9.5
Initial Unemployment Claims Filed in South Carolina	42,382	28,080	+ 50.9
Placements by South Carolina Employment Offices (nonagricultural)	NA[g]	3,632	—
Indexes of Prices Received by Farmers (1977=100)[c]			
All Farm Products	118	224	—
All Crops	144	242	—
Livestock and Products	86	221	—
S.C. Parity Ratio	78	77	+ 1.3
New Motor Vehicle Registrations			
Cars	6,551	7,318	- 10.5
Trucks	1,616	1,716	- 5.8

			First 11 Months		
			1981	1980	Percentage Change
Valuation of Building Permits Issued ($ millions)[d]					
Total for all S.C. Counties	$114.5	$128.2	$1,549.8	$1,639.6	- 5.5
Available County Data					
Aiken	2.6	1.3	32.2	24.6	+30.9
Berkeley	1.5	3.0	29.3	56.1	-47.8
Charleston	15.5	15.0	220.4	175.9	+25.3
Dorchester	1.8	4.0	29.8	29.6	+ 0.7
Lexington	5.9	4.3	51.3	90.7	-43.4
Richland	19.1	10.4	138.3	115.8	+19.4
Greenville	7.0	19.1	150.9	200.7	-24.8
Pickens	.7	15.9	32.9	59.8	-45.0
Spartanburg	4.7	8.4	112.0	81.7	+37.1

[a] Less than one-half of 1 percent.

[b] Due to the termination of certain data series by the Federal Reserve Bank of Richmond, this series has been replaced by the Federal Home Loan Bank of Atlanta.

[c] Ibid., the South Carolina Employment Security Commission.

[d] Note: These amounts are now being reported in millions of dollars instead of thousands of dollars.

[e] NA: Not available.

[f] Institutions with total deposits of $15 million or more as of 12/31/'79.

[g] Information not available because of change in ESARS Program.

[h] For November, 1980 index, 1967=100.

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DIVISION OF RESEARCH ■ COLLEGE OF BUSINESS ADMINISTRATION ■ THE UNIVERSITY OF SOUTH CAROLINA

Volume XXVIII, Number 5
April 1982

"Announcing: The Riegel and Emory Human Resource Research Center"
by Virginia Ann Van Seters

"We Know Where We're Going, or, How to Plan and Execute a Facilities Expansion Program"
by J. Carl Clamp

"An Analysis of Employees' Right to Refuse to Work Based on Perceived Unsafe or Unhealthy Working Conditions"
by Lovic A. Brooks, Jr.

"Increasing Productivity: Gold or Rainbow Gold of Supply-Side Economics?"
by C. Glyn Williams

"The Employer and Employment Laws"
by James J. Baldwin

"Bottom Lines"
by James B. Edwards

"A Profile of South Carolina Automobile Repair Complainants"
by Stephen A. Graham

"Demographic Characteristics and Automobile Dealer Sales Performance"
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"Identifying Potentially Profitable Commuter Airline Routes in South Carolina: A Report"
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Summary of Contents

3 **Announcing: The Riegel and Emory Human Resource Research Center.** Virginia Ann Van Seters of The University of South Carolina's College of Business Administration recounts here the details of the January 21, 1982, dedication ceremony for USC BA's newest research center.

5 **We Know Where We're Going, or, How to Plan and Execute a Facilities Expansion Program.** Author J. Carl Clamp's long and successful career in industry gives him both insight into, and experience with, how management chooses areas in which to locate new plants and expand existing ones. Here he shares his expertise by providing general recommendations.

13 Lovic A. Brooks, Jr., Senior Partner in the law firm of Constangy, Brooks & Smith, examines labor laws, agency rulings, and court decisions to provide **An Analysis of Employees' Right to Refuse to Work Based on Perceived Unsafe or Unhealthy Working Conditions.**

16 In **Increasing Productivity: Gold or Rainbow Gold of Supply-Side Economics?** USC economist Dr. C. Glyn Williams takes a hard look at the concept of productivity and suggests that although, in many respects, we appear to be headed in the right direction, we still have a long way to go.

23 **The Employer and Employment Laws,** a regular feature by James J. Baldwin, Partner in the law firm of Haynesworth, Baldwin, Miles, Johnson, Greaves and Edwards. This month, Baldwin discusses **The Nuts and Bolts of Age Discrimination Liability in Employee Discharge Cases.**

28 **Bottom Lines,** a regular feature by Dr. James B. Edwards, Professor of Accounting and expert consultant to Management. Dr. Edwards devotes his latest column to **Leasing Under the Economic Recovery Tax Act of 1981.**

31 Dr. Stephen A. Graham, formerly with the South Carolina Department of Consumer Affairs and currently a member of the faculty of Voorhees College, provides **A Profile of South Carolina Automobile Repair Complainants.** He identifies them as being predominantly middle-aged, white, well-educated, and middle-class.

36 USC professors Dr. Gerald V. Boyles and Dr. Charles E. Edwards discuss **Demographic Characteristics and Automobile Dealer Sales Performance.**

42 **Identifying Potentially Profitable Commuter Airline Routes in South Carolina: A Report.** Here Clemson University professors Dr. Clinton H. Whitehurst, Jr. and Dr. Mark A. McKnew explain how to determine potentially profitable commuter airline routes in South Carolina and identify 5 such channels. They also advise that, as a community grows, it should reevaluate its potential to support commuter service in terms of the profitability criteria outlined in this article.

47 **The Management Bookshelf,** a regular feature in which Dwight Gardner, USC BA's Business Librarian, reviews books of interest to business practitioners.

48 **Statistical Indicators of South Carolina Business.** A regular feature, listing the latest available data.

business and economic review

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Division of Research
College of Business Administration
The University of South Carolina
Columbia, South Carolina 29208

Member, Association for University Business and Economic Research

James B. Holderman, University President
James F. Kane, Dean, College of Business Administration
J. Stanley Fryer, Director, Division of Research

James M. Black, Editor
Virginia Ann Van Seters, Associate Editor

Opinions expressed in this publication are those of the authors, and not necessarily those of the Division of Research or the University.

Articles submitted for consideration for publication should concern business and economics topics of interest to managers in the private or public sectors. All manuscripts should be 12-26 double-spaced, typewritten pages, in English. Graphs, mathematical and quantitative data, charts, and tables are acceptable. Authors should submit 2 copies of each manuscript plus a vita sheet and a photograph. Upon publication, 6 complimentary copies of the journal are sent to the authors, with additional copies available upon request. Manuscripts to be considered for publication should be sent to: James M. Black, Editor, **Business and Economic Review,** College of Business Administration, The University of South Carolina, Columbia, S.C. 29208.

Published in Oct., Nov., Dec., March, April, and May by The University of South Carolina as a service for those interested in business and economic matters.

This month's cover: South Carolina's vacation industry has been a great contributor to this state's growth and development. Here, beachcombers enjoy Palmetto sunshine on the beach at Edisto Island. (Photo courtesy of South Carolina Department of Parks, Recreation & Tourism.)

Announcing: The Riegel and Emory Human Resource Research Center

By Virginia Ann Van Seters

Dr. James F. Kane, Dean of The University of South Carolina's College of Business Administration, is very pleased to announce the establishment of the Riegel and Emory Human Resource Research Center and the Center for Industry Policy and Strategy in BA's Division of Research. Details of the former are presented below. An account of the latter will appear in next month's issue of this publication.

The Riegel and Emory Human Resource Research Center has been endowed by the Emory family and Riegel Textile Corporation as a tribute to the late German H. H. Emory, former Chairman of the Board of Riegel and a Director from 1946 to 1979. A Riegel employee for 41 years and the son-in-law of Benjamin DeWitt Riegel, founder of the corporation, Emory died December 31, 1980.

A dinner marking the tribute was held January 20 in USC's Faculty House. The center was dedicated in a special ceremony in the College of Business Administration January 21. Attending both functions were members of state government, The University of South Carolina, and the Emory family, including Katherine Riegel Emory, widow of German Emory.

Dr. James B. Holderman, President of The University of South Carolina, presided at the dedication. The Honorable Richard W. Riley, Governor of the State of South Carolina; Robert E. Coleman, Chairman of the Board of Riegel; and Richard W. Emory, a Member of Riegel's Board of Directors and a brother of the honoree; served as spokesmen for the state, the corporation, and the Emory family, respectively. President Holderman and Coleman unveiled a plaque to be displayed in the Division of Research's new quarters now under construction. The plaque reads

Riegel and Emory
Human Resource Research Center

Dedicated in Memory of

German H. H. Emory

1910-1980

In reminiscing about his brother, Richard Emory said,

> I believe this educational project is a most suitable remembrance for my brother for two reasons. First, he appreciated and supported education. Second, he was a gentle person, genuinely interested in people.
>
> Human resources are people. In business my brother was more interested in people than in machines and figures. Despite the fact that human resources are the most important ingredient of any human activity, I believe that in business education more attention has been given to structuring, organizing, financing, managing, marketing, accounting, and the things people do than to the people themselves. My brother would applaud the dedication of this project to human resources.

Gov. Riley said,

> this center will be a valuable asset in South Carolina's quest for a good and prosperous life for its citizens. . . . I look forward to the knowledge to be found here, and to the many benefits that will accrue from it, to life and living in South Carolina.

According to Coleman, the basic objectives of the center are

Miss Virginia Ann Van Seters is Associate Editor for the Division of Research and Editor of the Faculty-Staff Newsletter in the College of Business Administration, The University of South Carolina. An honor graduate of USC's College of Journalism, Miss Van Seters has won numerous professional awards. Prior to joining the staff of the College of Business Administration, she also worked in legislative reporting and public relations.

- to conduct research in motivation and satisfaction of workers,
- to dignify work and the worker,
- to emphasize human values in the workplace,
- to enhance skills of management,
- to encourage higher levels of cooperation in the workplace, and
- to preserve the values of the free market system.

He feels that through this operation, university faculty and South Carolina business leaders can seek out and apply organizational designs and human resource management techniques that will be especially effective in this state. As a result, managers will be better able to gear reward systems and organizational structures to the specific needs and desires of South Carolina workers, and will be less inclined to import outside management philosophies that may be alien to area workers.

Dr. Joseph C. Ullman, Program Director of Management and Professor of Management in the College of Business Administration, has been named Director of the center. Dr. Ullman says "our first tasks will be to choose a small advisory committee of business executives and other outside persons interested in human resource research and to select a research topic for our initial investigation. I hope to have our first study underway this spring."

For more information concerning the Riegel and Emory Human Resource Research Center and its operations, please contact Dr. Ullman at 803-777-7410.

RIEGEL AND EMORY
HUMAN RESOURCE RESEARCH CENTER
DEDICATED IN MEMORY OF
GERMAN H. H. EMORY

From left to right: Richard W. Emory, attorney and member of the firm of Venable, Baetjer & Howard (Baltimore, Maryland) and brother of German H. H. Emory; The Honorable Richard W. Riley, Governor of the State of South Carolina; Robert E. Coleman, Chairman of the Board of Riegel Textile Corporation; Benjamin R. Emory, Executive Director of Maine Coast Heritage Trust (Northeast Harbor, Maine) and son of German H. H. Emory; Dr. James B. Holderman, President of The University of South Carolina; and Dr. James F. Kane, Dean of the USC College of Business Administration.

We Know Where We're Going, or, How to Plan and Execute a Facilities Expansion Program

By J. Carl Clamp

The fundamental management responsibility of planning and executing a facilities expansion program — which in the past decade or so has been a reasonably forthright and precise operation — has now been transformed into a venture not unlike the space shot to Saturn. The environmental unknowns in our economy today have replaced the reasonably clear-cut parameters we followed in the past. Just consider air, water, and noise pollution abatement; minority employment requirements; the loss of many profit advantages from industrial revenue bond financing; and many, many others. Yet, industry still must make daily decisions that will result in an optimum allocation of resources.

The choice of a community in which to locate a new plant or to expand an existing one is simply a matter of assuring **over time** the best return on investment in such facilities that is consistent with the long-range objectives of the company involved. To do otherwise would be to ignore the basic responsibility of management. The criteria involved in making such decisions, however, are no longer simple to meet, and even the long-range goals of our companies have been necessarily modified as to time, magnitude, and even substance. Returns on investments in new plants have been significantly affected by the demands of the ecologists. Inflationary cost spirals have followed. As a consequence, expansion plans have been modified, and many previously programmed facility decisions postponed or even eliminated.

J. Carl Clamp is Distinguished Lecturer in Management in the College of Business Administration at The University of South Carolina, and formerly President and a Director of United States Filter Corporation. Prior to joining United States Filter, where he held the full profit and loss responsibility for the company's worldwide operations, he served as Group Executive of the Industrial Products and Controls Group of International Telephone & Telegraph Corporation in New York, with responsibility for the operations of 14 I.T.T. divisions. Clamp has also held the positions of Senior Vice-President, Group Executive, and a Director of Allis-Chalmers Corporation; and Director of Corporate Planning and Development at General Mills, Inc. He earned an A.B. Degree in Economics and Mathematics magna cum laude at Duke University, and attended the Massachusetts Institute of Technology on an Institute Fellowship in Industrial Economics. While at MIT he completed all requirements for a Ph.D. Degree in Industrial Economics except the dissertation, a pursuit interrupted by the Korean War and service in the United States Air Force. During his academic career, Clamp served on the Economics faculties of Florida State and Duke Universities. He is a consultant to United States Filter and a member of the Board of Directors of 3 corporations.

The objective of the community is to insure the healthy growth and expansion that will keep it in the forefront of industrial development, and thereby optimize returns to its investors. The corporation and the community have one fundamental parameter in common: they must provide an atmosphere in which a satisfactory return on investments in expansion can be realized. The responsibility to use capital wisely in providing for the future of industrial companies is actually a shared one. Today, however, many communities can no longer — with firm conviction — verify the scheduled availability of electric power from nuclear generation sources, solid waste disposal capabilities, firm financing assistance, and the like, as industry makes its site location decisions.

For the record, let me state that the obligation of corporate management is to produce solid, long-term economic benefits. This obligation cannot ignore the full and complete concurrent responsibility to meet the environmental requirements of our economy, to provide a growing number of career opportunities for minorities, and to counteract the cancerous effects of ongoing inflation. In so doing, though, industry should not slow down the industrial expansion of this nation. Senator Henry M. Jackson (a Democrat from the state of Washington and a leading conservationist) commented recently in criticizing environmental extremists: "The United States is in danger of becoming a technological Appalachia!" Industry cannot let this happen. It must continue to make decisions that weigh the benefits against the costs. This job is difficult and obtuse, but it is the final responsibility of the corporation, not the community or any state industrial development agency.

THE NEED FOR INDUSTRIAL GROWTH

The answer to the question, "Does industry need growth?" is brief, loud, and clear: "Yes!" Looking at the future from within American industrial firms today, we must acknowledge that every progressive American company has the problem of insuring growth. Why has this issue become such a major preoccupation of American business? The facts are before us.

The United States economy today shows signs of a slowly developing maturity. We have witnessed in the years since World War II an average annual increase in real Gross National Product of less than 4.0 percent a year, while West Germany, France, Japan, and even Italy have reached and held a growth rate at least twice that. Further, the United States growth rate has declined precipitously in recent years.

To offset forces that could result in stagnation, the executives of most American industrial companies face a relentless competitive struggle in their search for ways and means of providing growth opportunities for their companies. The growth of a company can be measured by those increases in profit that result from effective planning for new markets, new products, new research and development, and, yes, new facilities. Yet, this growth in new plants and equipment has lost its impetus and is slowing down. As a result, we are losing the benefits of increased productivity from new and more efficient facilities.

THE IMPORTANCE OF PLANT EXPANSION

In 1980, American business and industry spent about $115 billion for new plants and new offices. In 1981, it spent no more than $125 billion, which, when adjusted for inflation, produced less physical expansion in 1981 than in 1980. Nevertheless, these expenditures involved more than 5,000 plant locations. Of this total, about 3,000 new plants and facilities were committed to locations and built on sites where the companies involved currently had no prior operations or activities. In addition, another 1,800 physical expansions took place in locations where the companies involved currently did have existing operations.

To place this expansion in perspective, there are 3,100 counties in the United States. So, it does not take much arithmetic to see that the 1981 expansion projects provided between one and two new or expanded plants for each county in the country, bringing with them the new jobs, the higher payrolls, and the generally healthy atmosphere resulting from such activity. As we all know, though, not every community will get its new plant, and many others will receive **more** than their proportionate share.

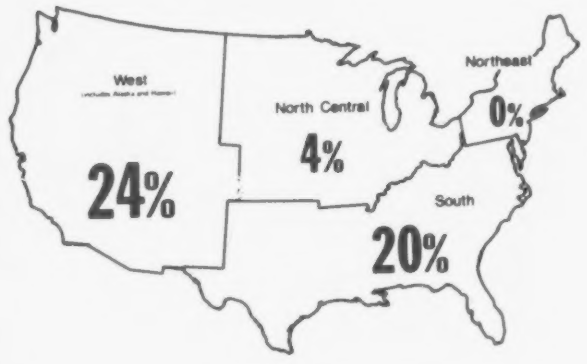
Outlays by the manufacturing sector are expected to continue in a declining trend through at least the second quarter of 1982. The Conference Board's series on capital appropriations by the 1,000 largest manufacturing corporations lends no support to expectations of an upturn in manufacturing outlays prior to the last half of 1982. The latest Conference Board data show a 1981 third-quarter decline in appropriations of 7 percent below the second quarter and a decline of 8 percent in appropriation backlogs. On this basis, an upturn in outlays as early as the second quarter of 1982 seems highly unlikely.

It is true that expenditures on new plants and plant expansions in the nonmanufacturing sector of our economy — excluding rail and air transportation — continue to rise, quarter by quarter, but even here at a **declining rate of increase.** Further, how long can this positive trend go on **if** manufacturing continues its decline? No economy can continue to build facilities for new services, new retail outlets, new golf courses, and the like if its manufacturing base — its fundamental source of productivity — continues to erode. Foreign direct investment in new plants and equipment has not reversed this trend.

It is my firm conviction that this decline in investment in new plants and equipment is due only in part to the sluggishness of our domestic economy, which has, of course, squeezed corporate profits and cash flow significantly. An equal, if not greater, deterrent in expansion decision making during the 1970's was the direct and indirect increase in investment necessitated by the unrealistic and/or unknown demands of ecological, sociological, and political purists who have ignored or rationalized away the resulting crush on realistic corporate profits and the cash generation required to provide for new facilities.

A third deterrent of perhaps even less overall impact has been the highly effective competition from Japanese, West German, and Italian imports. These have reduced profit margins drastically

FIGURE 1. Total Population Percentage Increase 1970 to 1980 (by region)



Source: DUALabs, a nonprofit public data resources center, 1601 N. Kent Street, Arlington, Va.

among those United States manufacturers competing directly, and postponed or eliminated a good number of new plant expansions.

THE SOUTH ATLANTIC STATES AND INDUSTRIAL EXPANSION

Despite the overall decline in the rate of investment in new plants and equipment for the total economy, let's review the performance of the South Atlantic states during the decade of the 1970's in securing more than their proportionate share of new plants and plant expansions. To set the stage for such an accomplishment, we must first be aware of the enormous shifts in the demographics and economic geography of the United States during the 1970's. There was a dramatic movement of population toward the South and the West and out of the big cities. The 1980 Census confirms that the states of the South and the West accounted for 90 percent of the increase in United States population from 1970 to 1980. The North Central area accounted for the remaining 10 percent of the increase, with the Northeast remaining unchanged, as illustrated in Figure 1. The South grew 20 percent to a level of 75.3 million people in 1980 — over 33 percent of the United States total of 226.5 million people.

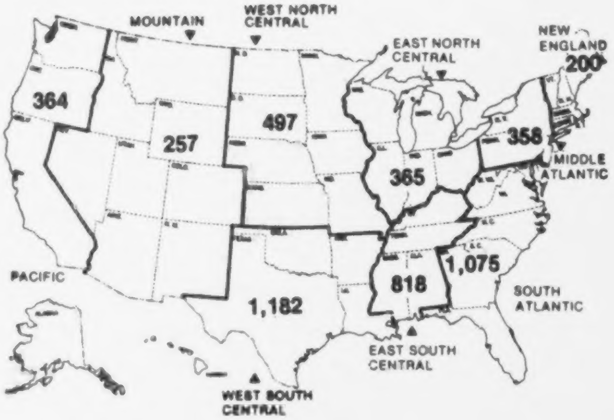
The implications of such a population shift on new industrial facility requirements are very large. Obviously new facilities were, and will continue to be, required to serve the expanding Southern (and Western) markets. More significant, however, is the ready availability of labor to staff the new facilities. Further, the ample labor supply in the South should result in manufacturing wage rates that will rise less rapidly than those in states with little or no population growth.

Favored by demographics, the South Atlantic states and local industrial development agencies mounted extremely effective campaigns in recent years to sell their advantages to corporate facility planners. The results of such actions during the eight-year period 1970-'77 are graphically portrayed in Figures 2 and 3.

With one-third of the United States population, the South gained 3,075 significant new plants — 60 percent of the total — during the period as well as 1,838 significant expansions — 54 percent of the total. The South Atlantic states' share is clearly indicated.

This trend continued into 1981, with the South Atlantic states securing 23.5 percent of the new manufacturing plants and 21.3 percent of the plant expansions. (See Figure 4.) It must be concluded, then, that the Southern states, and more specifically the South Atlantic states, have clearly established a superior climate for economic growth, thereby attracting a wealth of private enterprise investment during the decade of the 1970's.

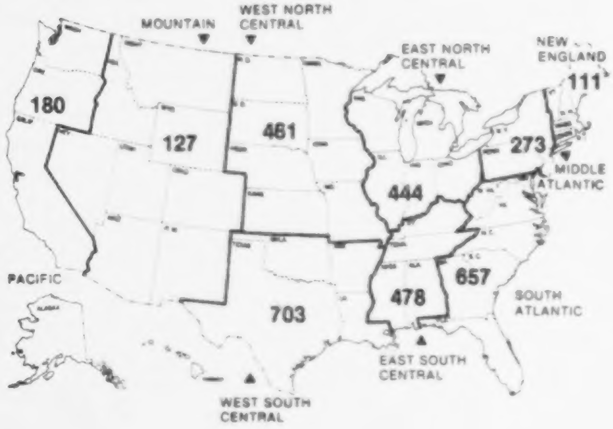
FIGURE 2. Geographic Distribution of 5,116 Significant New Industrial Plants 1970-'77 (by census region)



Source: Reprinted from **Site Selection Handbook,** Vol. 26, No. 1, February 1981, by permission of the publisher, Conway Publications, Inc., Atlanta, Ga.

Note: A significant new industrial plant is that plant that (1) involved an investment of at least $0.5 million; (2) had a floor area of at least 20,000 square feet; and (3) employed 50 or more workers; all as determined by the staff of Conway Publications.

FIGURE 3. Geographic Distribution of 3,434 Significant Industrial Expansion Projects 1970-'77 (by census region)


WEST NORTH CENTRAL
MOUNTAIN
EAST NORTH CENTRAL
NEW ENGLAND
111
180
127
461
273
MIDDLE ATLANTIC
444
PACIFIC
657
478
703
SOUTH ATLANTIC
EAST SOUTH CENTRAL
WEST SOUTH CENTRAL

Source: Same as Figure 2, this article.

Note: A significant industrial expansion project is that project that involved an investment of at least $0.5 million, as determined by the staff of Conway Publications.

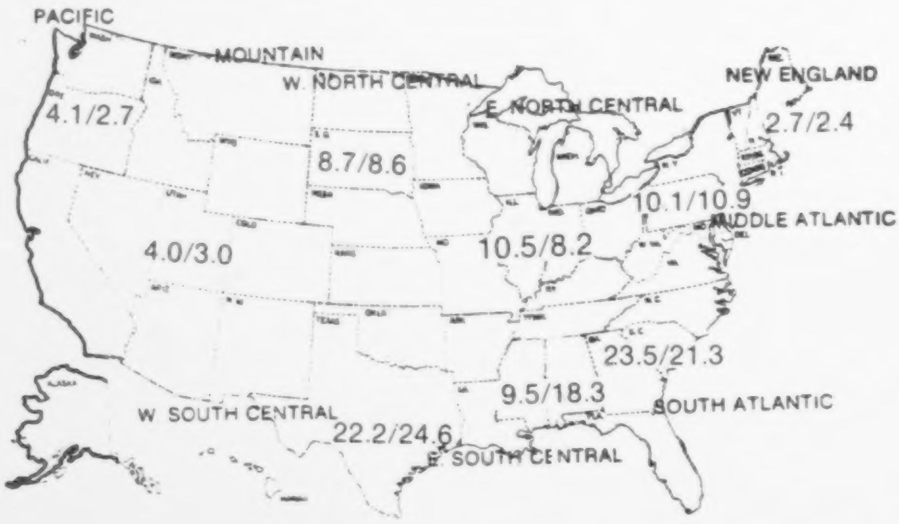
THE ART AND SCIENCE OF SITE SELECTION

All major industrial companies have checklists and procedures with which the communities are very familiar. There isn't much new "technology" to offer. Nevertheless, there are certain attitudes, needs, and perspectives — all peculiar to industrial firms in their searches for plant locations — that are critical to the process. More importantly, in the 1980's, there may be changes in these needs, perspectives, checklists, and procedures. Therefore, let me, first, restate certain basic principles and factors that will remain unchanged in the decision making processes, and then indicate how they are changing in the 1980's.

Industry must systematically program specific ways and means of increasing the earning power of all companies. It must try to increase productivity and efficiency through wiser managerial decisions affecting plant layout, plant locations, and distribution networks. But — it must not, and cannot, be swayed by emotions, history, or the birthplace of the Chairman of the Board in deciding physically where to locate such expansion.

Consistent with supporting economic growth by continually increasing the number of profitable operations, it is my belief that the basic criterion

FIGURE 4. New Manufacturing Facilities and Expansions 1981 (percentage shares by region)


PACIFIC
MOUNTAIN
W. NORTH CENTRAL
E. NORTH CENTRAL
NEW ENGLAND
4.1/2.7
2.7/2.4
8.7/8.6
10.1/10.9
MIDDLE ATLANTIC
4.0/3.0
10.5/8.2
23.5/21.3
9.5/18.3
SOUTH ATLANTIC
W SOUTH CENTRAL
22.2/24.6
E. SOUTH CENTRAL

Source: Reprinted from **Site Selection Handbook,** Vol. 27, No. 1, February 1982, by permission of the publishers, Conway Publications, Inc., Atlanta, Ga.

Note: The first number in each pair of numbers above is the percentage of new manufacturing plants; the second, expansions. The top region in terms of new manufacturing plants was the South Atlantic. This region also garnered the most service facilities and foreign plants. The top region in plant expansions was the West South Central.

Square D Company, U.S. 76, Richland County.

affecting location decisions is long-range returns from natural advantages rather than any short-term returns from artificial concessions. In other words, industry cannot permit the **temporary** advantages of free rent, free water, free utilities, golf club memberships, and the like to lead it into the trap of building and operating an uneconomic plant. It won't help the community, and it certainly won't help the stockholders who own our companies.

Let's consider briefly the importance to the industrial firm of making sound expansion decisions based on the detailed and involved analyses necessary to validate a final decision to build or expand in any community. Just how much does it cost to plan an expansion project? Depending upon the size and scope of the operation, the typical plant site study last year in the typical American industrial firm required a budget between $80,000 and $170,000 in out-of-pocket expense alone. American industry in 1981 spent between $240 million and $500 million on location and plant site studies, as well as many times the above estimate on associated expansion project expense.

Certainly no one in any responsible position in management would commit himself to expenditures of this magnitude unless the problem of making the right expansion decision was paramount in his thinking. These costs will continue to rise in the 1980's and may well result in fewer expansions.

It must also be realized that the choice of location and site are **secondary** decisions. The basic decision is whether to expand at all. Despite the persuasiveness of chambers of commerce, industrial development commissions, banks, railroads, and utilities, it helps none of us in the kind of economy we have today if the new plant should never have been built at all!

As soon as the decision to expand has been carefully made, the corporation must determine precisely **where** it should expand. This is clearly an **internal** problem in every growth company, large and small. Certainly outside assistance is important, and often necessary. The final selection, however, must remain an **internal** responsibility for the industrial firm and not be shifted to outside groups. Once a plant is up and in operation, the company will be wedded to the site and the community for years, if its obligations to its stockholders and the community are to be met.

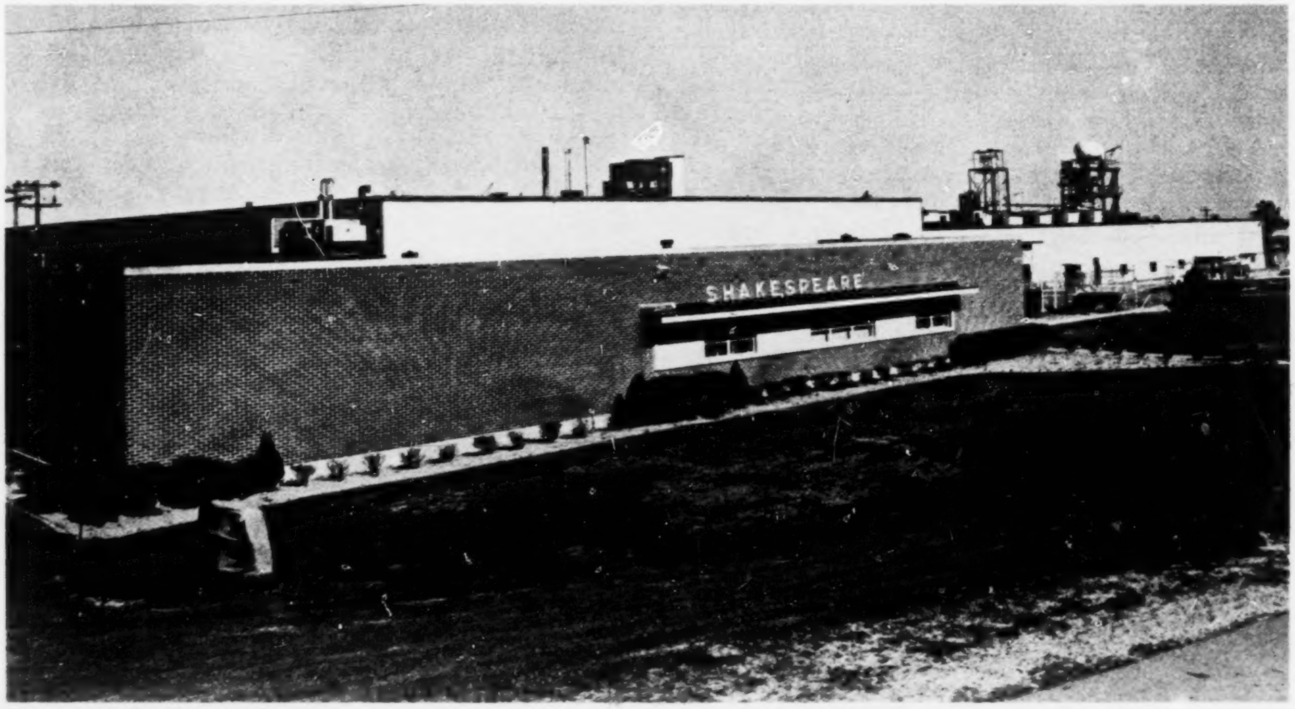
THE COMMUNITY AND THE EXPANSION DECISION

With fewer expansions in the 1980's, there is a factor that may play a greater role in the actual selection of a community. Specifically, the internal analyses of possible locations by a company frequently may identify several cities in the same broad geographical area as acceptable alternatives. With fewer location decisions to make, and with today's pressures on profits and vigorous competition from abroad, corporations in the 1980's will, in my opinion, give much more weight to the strategic location of their customers. If Cities A and B are equally attractive, but a location in City A would on balance enhance marketing efforts, the corporation should select City A rather than City B. Such a consideration has long been a part of the normal site selection process, but will be given much more emphasis in the future.

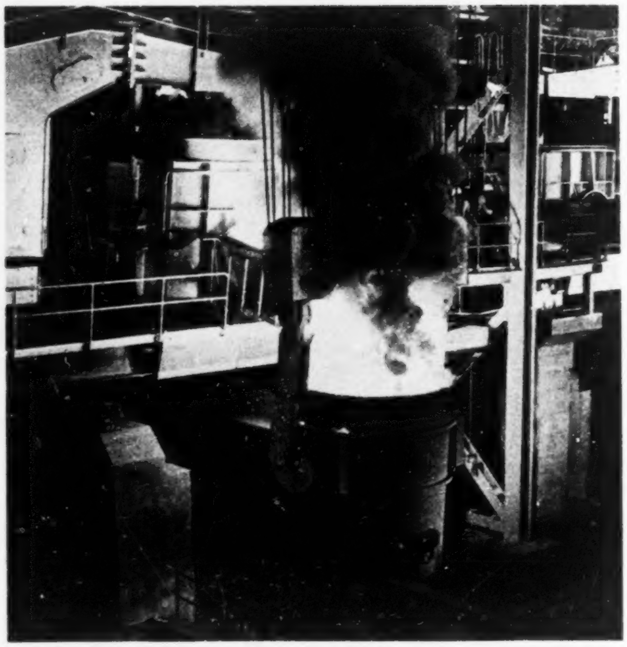
The decision makers in industry are now familiar with most of the lures that states, communities, and even utilities offer — tax abatement and concessions, free utilities, direct loan programs, low-priced labor, and the like. Most of these enticements, however, are just frosting on the cake. Of course, industry wants this frosting and will gladly take it, but the basic cake is the community itself. Those who choose plant locations are much less enthusiastic about quick and easy credit than they are about the cities that offer it. The community must want the plant, it must accept its presence, and it must be willing to live with it in the future. Community attitudes, habits, and prejudices must be conducive to the entry.

Many communities have an "old guard" who resist industry, modernization, and change. It would be catastrophic if such a group should negate the spirit and growth consciousness of aggressive community leaders. A lot of communities don't realize that, in attracting industry, the required public services for new plants might well cost more than the tax base being courted. There's no precise accounting in advance as to what it will cost to service a new company or what the community will receive in return. The community itself must recognize these contingencies and accept them. Tax attitudes are far more important than tax rates.

Now, in the 1980's, a much more insidious and, to my mind, dangerous factor must also be carefully weighed. In too many communities we are now finding a "new guard," a group of young or not-so-young liberals who oppose, directly or indirectly, industry itself on purely philosophical grounds. They are the "Antiestablishment Moderns" who attack private enterprise with every conceivable device known to man. If they have displaced the sound judgments in any community and been



Shakespeare Co., Richland County.



Georgetown Steel Corp., Georgetown County.

voted into office, then industry cannot and will not become their prey! This unfortunate development is a challenge for every community.

Directly associated with the antiestablishment demagogues are the socioeconomic purists who, as legislators and administrators, are promulgating in many states tax programs and related regulatory practices that threaten the very existence of viable industry in their own states. Accordingly, industry must consider very carefully the attitudes and forces at the state level that are tending to place it in an untenable position from the standpoint of competition and return on invested capital through disproportionate tax increases and unrealistic regulatory practices. Not only will the resulting added cost burdens prevent an expansion in any given state, but they also might well force a shutdown of existing operations and considerations of plant expansion abroad. Industry accepts willingly the responsibility of sharing equitably the rising cost of government. Such a disaster, however, if it continues, could threaten the economic security of the United States by destroying its industrial base.

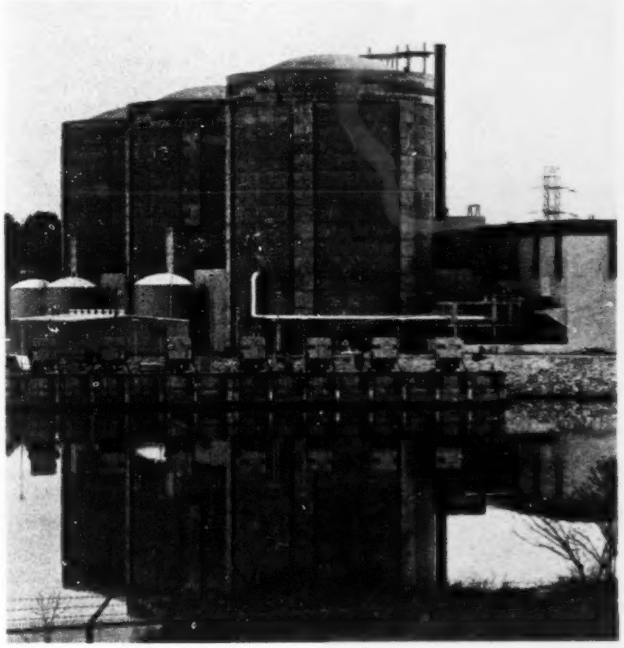
At the local level — in the community itself — industry has been forced to question the basic soundness of tax concessions. Many companies now look not only at what they will pay in taxes, but also at what they will get in return. Often they're willing to pay **more,** if excellent facilities and an unrestricted public service environment are obtained locally. What industry needs is a community attitude of acceptance, service and willing cooperation — not concessions.

THE TRADITIONAL TESTS

I will review briefly just a few of the traditional tests that will continue to influence the usual checklist approach to plant location. First, **the cost of land.** On a total cost basis, it has been my experience generally that the cost of land is the least important factor in site selection. We don't ignore it, obviously, but it is considered only after a careful and thorough evaluation of much more important factors: distribution patterns, proximity to markets and raw materials, cost of utilities, waste disposal facilities, and zoning, among others.

Second, **the availability of labor.** Since World War II, labor rates have become more uniform. The once steep regional wage differentials have narrowed steadily. High employment levels have affected the quality, as well as the rates, of available labor. Training programs, on the whole, appear to be still woefully inadequate, but, they are improving slowly.

What becomes important, therefore, is labor's attitude and a way of life in the community that provides a good, consistent labor force. Certainly today there are "scattered pockets" of plentiful labor at favorable rates all over the country,



Oconee Nuclear Plant, Oconee County.

without necessary reference to the extent of unionized labor in that location.

However, these pockets may not always be available and tight timing is required for maximum advantages. Some examples would be Manchester, New Hampshire; Lowell, Massachusetts; South Bend, Indiana; portions of Appalachia; Seattle; and Los Angeles.

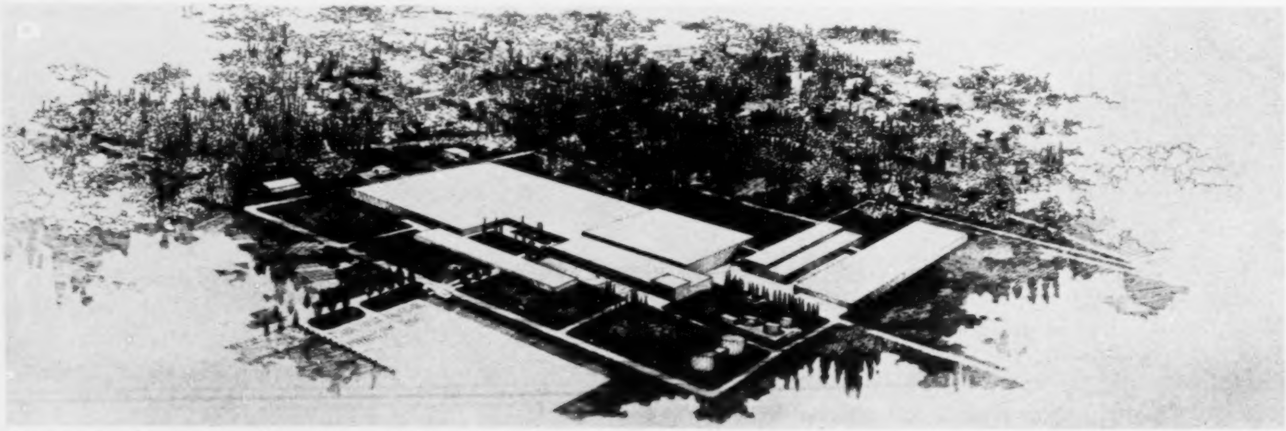
Worthy of heavy emphasis for the 1980's, however, is the specific availability of trainable and willing minority workers. Given the requirements of the Davis-Bacon Act and the mandates of the Equal Employment Opportunity Commission program, much greater consideration will be given this factor by many corporations in evaluating the labor force of any given community.

Third, **community site studies and industry feasibility surveys.** Some are good and objective, and of help to industry. Far too many, though, are promotion oriented, poorly documented, and downright misleading. Quoting one authority, "Hire the consultant who did the job for the city. He'll know the area thoroughly, and this time he'll be working for you!"

The essence of effective planning in industry is the establishment of realistic objectives after a careful review of one's strengths and weaknesses. The same is true for the community. The community must know itself, its advantages, and where it wants to go, and then do a sophisticated job of getting there. It can't just sell its "plusses": industry usually knows them. Rather, the community must determine its "negatives" and carefully analyze them. Then it must review them candidly and objectively.

Much too frequently the community proudly introduces the representatives of a corporation evaluating that community only to the management of business firms currently operating there. Naturally the comments of such management will be positive. They have been committed to the location by past decisions and may not be fully objective. The community must willingly and openly discuss the reasons why any companies have closed plants there to go elsewhere, or gone out of business entirely. Such candor enables the community to present its own analysis of such departures and to review remedial actions taken that would improve the environment for newcomers. If the potential investor has to initiate such inquiries — and the sophisticated corporation certainly will — the community may well be eliminated as a viable location for the new facility.

Last, **the environment and its ecology.** This is the major factor that will affect location decisions in the 1980's. I have no other conclusion to reach than this: the costs of environmental protection — in any given community — will be the key determinant of whether a corporation will locate or continue to operate in that community. There is no escape from this conclusion. The dilemma is compounded by the uncoordinated and confusing actions of three levels of government (federal, state, and local) that affect each community, and the sincere attempts of its industry to control pollution at all locations on an equitable and economic basis for all concerned. The environmental activists at all levels of government and in almost all walks of community life have introduced a cost factor that has vetoed major portions of the long-range expansion plans of many, many industrial organizations. We all want, and need, clean plants and pure air and water, but industrial growth cannot be halted. Can our economy afford the loss of planned nuclear power generation? The environment has to be reviewed **realistically.**



Michelin Tire Corporation, Manufacturing Division, Lexington County.

We should not allow emotionalism, misinformation, and political expediency to force us into irrational and unsound actions that will inhibit growth. We can develop a stronger economy with an optimum ecology balance by bringing sound and mature judgments into play.

THE FUTURE

To summarize, the move of industry into a community is a marriage — not just a date. The corporation cannot be enticed: it must consider the future.

The danger of taking the future for granted is even more critical for the state and the community. In many states, cities, and towns, the future **is** taken for granted, and developers do not really plan for the progress necessary to insure growth. Too many communities have tried to reassure themselves that something will turn up, that a new company will come in, or even worse, that all their existing plants will go on forever producing the same products. But — optimism is not enough.

Times and markets have changed, and unless activities are kept under constant review, they will not continue to be always profitable and always growing. New facilities must be introduced as existing plants are superseded or no longer yield adequate returns. Strategic actions must be taken by all industrial development agencies to insure economic progress. The South Atlantic states and their communities, buttressed by a healthy population increase during the decade of the 1970's, have developed those strategies that have made them the top region in terms of new manufacturing plants — of both domestic and foreign origin — during the 1970's.

We have a major challenge for the decade of the 1980's in providing an atmosphere for, and a means of, achieving profitable growth for each community, for its utilities, and for industry. There can be no economic growth — no effective war on poverty and inflation — for any locality, state, or nation without the prospect of profit and the opportunity for greater private capital investment. Again — and I recognize this fully — every locality and area is in competition for new plant investment. At the same time, however, every industrial investor must optimize his return and minimize his risk. He must seek out the superior climate for investment, the superior climate for profit. And — he may make a mistake! He has, however, little choice. A reasonable profit is the determinant of success for industry, and I submit that the successful corporation is our greatest weapon today in the preservation of the American way of life.

An Analysis of Employees' Right to Refuse to Work Based on Perceived Unsafe or Unhealthy Working Conditions

By Lovic A. Brooks, Jr.

The production employees at Goggle Manufacturing Company had worked all day to complete a rush order for a very important customer (VIP Company). The current problem faced by Goggle was that all of its delivery trucks were on the road, and it had no way to deliver the order. At just that moment, Truck Driver Rowdy Roberts pulled into the dock after completing his normal deliveries.

Traffic Manager Tom Tuffguy approached Rowdy and said, "Boy, am I glad to see you. We'll get your rig loaded up in a minute, and you can get this load over to VIP Company."

Rowdy responded, "Hold it, Tom. I want to go to the ballgame tonight, and besides, the brakes on this truck are just about to go out. I barely made it back to the dock."

Sizing up the situation, Tom stated, "That truck has been on a regular maintenance schedule. We just checked the brakes last week and they were fine."

Undaunted, Rowdy retorted, "I don't care who checked the brakes. I've been driving that truck all day and I say it's not safe. I'm not going to risk my life just to get one load of goggles over to VIP."

Not to be outdone, Tom concluded, "Well, if you can't deliver this load, we'll just have to find somebody who can. You're fired."

In recent years an increasing number of employers have been faced with situations similar to that outlined above. There is a growing consciousness of safety and health concerns on the job, and this consciousness more and more frequently translates into a refusal to perform certain duties employees believe to be unsafe or unhealthy. The employees' conduct may take the form of a refusal to perform a single task or it may take the form of a refusal to perform any work until the perceived unsafe or unhealthy condition has been corrected. An employer faced with such action by its employees must consider three federal laws that protect employee conduct under such circumstances. This article will examine briefly the nature of employee rights under each of those statutes so that employers will be sensitive to situations that can result in legal liabilities unless they are properly handled.

THE NATIONAL LABOR RELATIONS ACT

Section 7 of the National Labor Relations Act (NLRA) provides that employees shall have the right to engage in concerted activities for their mutual aid or protection.[1] This statute is the source of the National Labor Relations Board's "protective concerted activities" doctrine. In order for an employee to receive the benefit of Section 7, his or her conduct must be both protected **and** concerted. The Board has consistently held that employee complaints and protests involving safety or health are **protected** and thus clearly meet that part of the two-pronged test.

For many years the Board held that in order for employee conduct to be **concerted**, two or more employees had to be involved in the complaint or protest. Since 1966, the Board has maintained that one employee can be engaged in **"concerted"** activity and thus be protected by Section 7 **if** that employee's protest involves a subject matter that would benefit other employees.[2] Most courts, however, have rejected this "constructive concerted activity" doctrine.[3]

Nonetheless, the Board has not been deterred by the refusal of the courts to accept its reasoning, and the agency has continued to hold that individual employees who make safety or health complaints or engage in protests over such issues are protected by Section 7 of the NLRA.[4] Of course, the courts agree that where two or more employees engage in safety protests, their conduct is both protected and concerted. The practical effect of the stalemate between the Board and the courts on the "constructive concerted activity" doctrine is that unless an employer is willing to "pay the freight" in legal fees and related expenses to challenge the Board in court, the employer should treat any safety or health related protest by an individual employee as being protected by the National Labor Relations Act.

THE LABOR-MANAGEMENT RELATIONS ACT

The second federal law that protects employees who protest working conditions related to safety or health is Section 502 of the Labor-Management Relations Act (LMRA).[5] This statute provides that employees who quit their jobs or refuse to perform certain duties because they believe in good faith that abnormally dangerous working conditions exist shall not be considered as being on strike.

The NLRB and the courts traditionally have applied this statute to unionized operations with

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[1] 29 U S C §157 provides in part "Employees shall have the right to ... engage in other concerted activities for ... other mutual aid or protection ..."

[2] **Interboro Contractors, Inc.**, 157 NLRB 1295 (1966) enforced 388 F 2d 495 (2nd Cir. 1967).

[3] **Kohls v. NLRB**, 629 F.2d 173 (D.C. Cir. 1980); **Krispy Kreme Doughnut Corp. v. NLRB**, 635 F.2d 304 (4th Cir. 1980); NLRB v. Bighorn Beverage, 614 F.2d 1238 (9th Cir. 1980); **ARO, Inc. v. NLRB**, 596 F.2d 713 (6th Cir. 1979); **NLRB v. Buddies Supermarkets, Inc.**, 481 F.2d 714 (5th Cir. 1973); **NLRB v. Northern Metal Co.**, 440 F.2d 881 (3rd Cir. 1971).

[4] Alleluia Cushion Co., 221 NLRB 999 (1975).

[5] 29 U S C § 143 provides in part: "... nor shall the quitting of labor by an employee or employees in good faith because of abnormally dangerous conditions for work at the place of employment of such employee or employees be deemed a strike under this Act."

union contracts that prohibit strikes. The NLRB has held that employees covered by such a "no-strike" clause are not protected by Section 7 of the NLRA because their union has "waived" their right to strike over safety and health matters by entering into a contract that forbids any strike. From this alone it might appear that a unionized employer with a no-strike clause could discipline employees for engaging in a protest over safety and health matters. Such is not the case, however, because the U.S. Supreme Court has held that Section 502 expresses Congress's clear intent that a protest over safety and health matters is not a "strike" and therefore such conduct cannot violate a contractual no-strike clause.[6]

The bottom line is that a unionized employer faced with a safety or health protest cannot rely on a no-strike clause in the union contract to discipline the protesting employees. Even though Section 7 of the NLRA may not prohibit such discipline, Section 502 of the LMRA does protect such protests even where there is a no-strike clause in the union contract.

THE OCCUPATIONAL SAFETY AND HEALTH ACT

The third statute that regulates employer conduct when faced with a safety protest is Section 11(c)(1) of the Occupational Safety and Health Act (OSHA).[7] This law provides that no person shall discharge or discriminate against any employee because that employee exercise any right protected by the act. The Secretary of Labor has issued regulations[8] providing that an employee may not be disciplined or discharged for refusing to perform any task where

1. the employee has a reasonable belief that there is a real danger of death or serious injury,
2. the employee has a reasonable belief that the situation is so urgent that there is no time to correct the danger through an OSHA complaint,
3. the employee's action is taken in good faith,
4. the employee has no reasonable alternative, and
5. the employee attempted to get the employer to correct the danger but was unsuccessful.

The U.S. Supreme Court has recently upheld the validity of these regulations.[9] Thus, this statute protects employees who engage in safety protests even though they may do so **alone** and even though there is a union contract that forbids strikes for any reason.

WHAT HAPPENS TO ROWDY THE TRUCK DRIVER?

Based on these three laws, it is apparent that Rowdy, the truck driver for Goggle Manufacturing Company, has some federal statutory protection for his otherwise insubordinate conduct. However, two questions do remain. First, was Rowdy really protesting safety conditions or did he just want to go to the ballgame? Second, assuming Rowdy was protesting safety conditions, was there anything Tom the Traffic Manager could have done to get that rush order delivered to VIP Company?

As to the first question, the OSHA regulation outlined above requires both that the employee be acting in **good faith** and that the employee have a **reasonable** belief that an unsafe condition existed. In contrast, although the NLRB does require that the employee act in good faith, it does **not** require that he have a **reasonable** belief that unsafe conditions exist.[10] Rather, the NLRB only requires that the employee have a sincere, even though unreasonable, belief that the protested working conditions are indeed unsafe. In Rowdy's case, it is doubtful that his statement about wanting to go to the ballgame, standing alone, would be sufficient to challenge the sincerity of his belief that the truck's brakes were unsafe. If Tom the Traffic Manager had arranged for the brakes to be checked by a mechanic, however, and if the mechanic had reported no trouble, Rowdy's statement about the ballgame would have made his protest appear to be insincere and therefore unprotected. Accordingly, under these circumstances, Rowdy's discharge probably would have been held to be lawful under both Section 7 of the National Labor Relations Act and Section 11(c)(1) of the Occupational Safety and Health Act.

Assuming Rowdy's protest to be protected, what steps could Tom have taken to get the order delivered? The above discussion indicates that absent some solid basis for questioning his sincerity, Rowdy cannot be disciplined for refusing to drive the truck. Even so, Rowdy cannot refuse his boss' order with total impunity. Goggle Manufacturing retains its right to run its business and to deliver its products. If Rowdy refused to drive the truck and if the company was satisfied that notwithstanding Rowdy's fears, the brakes really were safe, the company could either have (1) hired a new employee to drive the truck and assigned that employee Rowdy's job on a permanent basis, or (2) transferred or promoted a current employee to fill the vacancy created when Rowdy refused to perform his job duties. In either event, Rowdy would have been "replaced" and could lawfully have been laid off until the company had another truck driving vacancy or an equivalent job to offer him. By replacing Rowdy rather than disciplining him, the company would have demonstrated that it did not act to punish Rowdy but only to protect its legitimate interests in securing the timely delivery of its products.

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[6] **Gateway Coal Co. v. United Mine Workers of America**, 414 U.S. 368 (1974).

[7] 29 U.S.C. § 660(c) (1) provides in part: "No person shall discharge or in any manner discriminate against any employee . . . because of the exercise by such employee on behalf of himself or others of any right afforded by this chapter."

[8] 29 C.F.R. § 1977.12. The South Carolina Occupational Health and Safety Law, § 41-15-10, **et seq.**, and the regulations adopted by the South Carolina Department of Labor pursuant thereto are identical to their federal counterparts on this subject.

[9] **Whirlpool Corp. v. Marshall**, 445 U.S. 1 (1980).

[10] **Tamara Foods**, 258 NLRB #180 (September 30, 1981).

CONCLUSION

No reasonable employer would knowingly ask its employees to work under unsafe or unhealthy conditions. To do so would not only be inhumane but would also subject the employer to significant liability in worker's compensation benefits and OSHA fines. Even so, safety and health disputes do exist and there are times when reasonable employers feel justified in requiring their employees to perform duties that the employees reasonably and sincerely believe to be unsafe or unhealthy. An employer faced with such a situation should act cautiously with full recognition of the legitimate employee rights outlined above.

Increasing Productivity: Gold or Rainbow Gold of Supply-Side Economics?

By C. Glyn Williams*

THE CONCEPT OF PRODUCTIVITY

Productivity is the relationship between the output of goods and services and the input of resources. At the national level the broad figure of output is the Gross National Product (GNP). This is the market value of all final goods and services produced by the whole economy in a given time period. It includes goods for consumption, by private individuals and government, and investment for new capacity and inventory. Since the GNP is a compound figure of the quantities of goods and services multiplied by their prices, the real GNP can be arrived at by adjusting for price changes over time. The real GNP that results is a measure of the total physical volumes of final goods and services, combined by means of constant prices as of one period or of one point in time.

There are two defects that follow from this method of measuring real GNP. First, quality changes in goods and services are difficult to monitor. Second, output in some industries is estimated from employment data. This problem is most serious in government and some of the other industries in the service sector. Productivity mea-

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*I wish to thank my friend and colleague Dr. Robert W. Rosen, Professor of Management in the College of Business Administration at The University of South Carolina, for his helpful comments on an early draft of this article.

sures are available for a wide range of industries, for broad subsectors of the economy, and for the whole economy, and are published by the Bureau of Labor Statistics and the Department of Commerce. These productivity measures are partial productivity indices in that they measure the productivity of particular factor inputs — productivity per employee, per hour worked, or per person paid for. Total factor productivity measures are also partial because they relate only to measurable stocks of human and nonhuman inputs, and their interaction in the productive process. Over the long run, productivity growth arises from improvements in the quality of inputs, and in the technology and organization of production.

Total factor productivity includes labor and nonlabor inputs — land and other natural resources — and the stocks of man-made capital including structures, equipment, and inventories. It is the interaction of various measures of these stocks of inputs relative to the resulting flows of output that is being measured in comparative indices of productivity among countries, among subsectors, and over time.

PRODUCTIVITY AND SUPPLY-SIDE ECONOMICS

Lagging productivity growth ranks high among the frequently mentioned ills of the American economy. Double-digit inflation, chronically high unemployment, low output growth, low productivity growth, low rates of capital formation, faltering international competitiveness, and a decline of the dollar among international currencies are held to be symptoms of a deep malaise.

Supply-side economics focuses on productivity as a key factor in restoring economic health. The contribution that supply-side economics can make to solving these problems in the short run is probably limited. But, in the medium run, say by 1990, failure to achieve a better productivity growth record portends a bleak future.

A multitude of factors, many of them interrelated, underlie productivity and the dynamics of productivity change. Our success will ultimately depend on understanding this web and affecting it at crucial points. This article will identify some of the areas of concern.

HOW UNITED STATES PRODUCTIVITY COMPARES WITH THAT OF OTHER COUNTRIES

Comparison of productivity among countries is difficult when the comparisons go beyond firms or industries producing roughly similiar products. Such microeconomic comparisons give us very limited information about the basic overall productivity of various economies. It is this measure that determines how well or how badly a people live.

A variety of indices are used to provide a rough approximation of the relative positions of countries with regard to aggregate productivity levels. The results of using different indices are substantial variations in the relative standing of the United States. However, two observations can be safely made.

1. The United States has a high level of relative productivity, standard of living, and international competitiveness.
2. The relative advantage of the United States in all these respects appears to be decreasing.

No simple continuing index is available to provide year-by-year comparisons of countries. Tables 1, 2, and 3 are examples of the data that can be used to illustrate relative living standards, to

TABLE 1. GNP per Capita, 1979, and Annual Growth Rate of GNP per Capita, 1960-'79, Selected Countries*

Economy	GNP per Capita $ 1979	Average Annual Growth of GNP per Capita Percentage 1960-'79
Industrialized Market Economies		
Switzerland	$13,920	2.1%
Sweden	11,930	2.4
Denmark	11,900	3.4
West Germany	11,730	3.3
Belgium	10,920	3.9
Norway	10,700	3.5
United States	10,630	2.4
Netherlands	10,230	3.4
France	9,950	4.0
Canada	9,640	3.5
Australia	9,120	2.8
Japan	8,810	9.4
Austria	8,630	4.1
Finland	8,160	4.1
United Kingdom	6,320	2.2
New Zealand	5,930	1.9
Italy	5,250	3.6
Ireland	4,210	3.2
Centrally Planned Economies		
East Germany	6,430	4.7
Czechoslovakia	5,290	4.1
USSR	4,110	4.1
Hungary	3,850	4.8
Poland	3,830	5.2
Bulgaria	3,690	5.6

Source: The World Bank, **World Development Report** (Washington, D.C.: The World Bank, August 1981), p. 135.

*Less developed economies omitted for reasons of space.

TABLE 2. Indices of Real Gross Domestic Product per Employed Person 1950-'79 for Selected Countries (expressed as a percentage of United States GDP per capita)

Economy	1950	1960	1973	1979
United States	100.0%	100.0%	100.0%	100.0%
Canada	85.0	90.4	94.2	92.1
Japan	15.6	24.1	55.2	68.4
United Kingdom	54.0	54.5	56.8	60.5
France	42.7	54.2	76.5	89.4
West Germany	37.5	56.6	74.2	88.7
Italy	25.7	35.3	54.7	60.6
Belgium	56.2	60.5	78.8	90.5

Source: John W. Kendrick, "International Comparisons of Recent Productivity Trends" in **Contemporary Economic Problems**, 1981-'82 Edition, ed. W. Fellner (Washington, D.C.: American Enterprise Institute, 1981), p. 136.

TABLE 3. Indices of Real^a and Nominal^b Gross Domestic Product per Capita 1975 for Selected Countries (expressed as a percentage of United States per capita)

Economy	Indexes of GDP per Capita	
	Real GDP	Nominal GDP
United States	100.0%	100.0%
West Germany	78.2	64.1
France	73.2	58.2
Belgium	72.0	55.1
Netherlands	68.7	50.8
United Kingdom	63.5	45.7
Japan	59.2	39.8
Italy	49.2	36.0
Hungary	42.7	21.6
India	6.9	2.1
Sweden (1974)	86.0	104.0
Libya (1974)	86.7	92.5
Kuwait (1974)	177.0	161.0

Source: I. B. Kravis, A. W. Heston, and R. Summers, "Real GDP per Capita for More Than One Hundred Countries," **Economic Journal** 88 (June 1978): 216.

[a] Real GDP = GDP converted to dollars at purchasing power parity.

[b] Nominal GDP = GDP converted to dollars at exchange rates.

Note: Sweden has been included here as the only country shown by the authors with a higher nominal GDP than the United States. Libya and Kuwait have been included as oil export dominated countries.

the extent that consumer satisfactions are reflected in market transactions. Table 1 is a listing by The World Bank of GNP per capita in industrialized market economies and centrally planned economies for 1979. The figures are converted into 1979 dollars, adjusted to reduce distortions resulting from temporary deviations from a trend value.

This table shows the United States ranking seventh among industrialized market economies. For countries comparable in population size the ranking of per capita productivity is still remarkable — United States, $10,630 (population 223.6m); USSR, $4,110 (264.1m); Japan, $8,810 (115.7m); and (not included in table) Brazil, $17,800 (116.5m); Indonesia, $370 (142.9m); China, $260 (964.5m); and India, $190 (659.2m). The discrepancies are vast and testify to the high level of productivity the industrialized market economies have attained.

Table 2 is a differently constructed comparison of national productivities. It shows the United States ranking higher than some countries with which it compared unfavorably in the GNP per capita comparisons. This is reflected also in Table 3 by I. B. Kravis, A. W. Heston, and R. Summers. Here the authors have attempted to eliminate bias resulting from the fact that ratios of national currency purchasing powers relative to their exchange rate values vary by income levels. This bias tends to reflect unfavorably on low income countries in intercountry comparisons. In the early 1970's, Sweden alone of the nonoil export dominated countries ranked higher than the United States, and this disadvantage, too, disappeared when differences in living costs were taken into account.

The same tables show a changing relationship among countries. Generally, there is reason to believe that the league standings will change. This is not at all undesirable as long as real living standards continue to rise and only relative positions change. The world has not yet provided any real test cases of the thesis that continuing relative deterioration will eventually lead to absolute decline. The cases of Uganda and Argentina surely do not count, although the United Kingdom appears to be coming closer to giving substance to this spector. However, that country, too, may have reasons peculiar to itself that explain its predicament independently of the rules of competition in international laissez faire.

Does lessening relative advantage portend future trouble? Only if, under the prevailing rules, the United States fails to reestablish flexibility in its resource allocation process.

Advantages in natural resources was one of the main bases for United States economic superiority historically. Abundant and fertile land, timber, industrial raw materials, accessible sources of energy, and an agreeable climate have been important attributes of the American productive system. It is this precise natural resource element that now appears as the main obstacle to continued prosperity. Table 4 shows that all the countries in this small but important sample of industrial

TABLE 4. Changes in Real Business Product, Total Factor Input, and Productivity in Selected Countries 1960-'73 and 1973-'79

Economy	1960-73				1973-'79			
	Real Product	Total Factor Input	Total Factor Productivity	Productivity as Percentage of Real Product Change	Real Product	Total Factor Input	Total Factor Productivity	Productivity as Percentage of Real Product Change
Japan	10.8	4.7	6.1	56%	4.2	2.4	1.8	43%
France	5.8	1.9	3.9	67	3.2	1.1	2.1	66
Canada	5.8	3.1	2.7	47	3.2	3.3	-0.1	-3
Italy	5.6	0	5.6	100	2.6	1.8	0.8	31
Belgium	5.5	1.1	4.4	80	2.1	-0.5	2.6	124
West Germany	4.6	1.4	3.2	70	2.2	0.1	2.1	95
United States	4.4	2.5	1.9	43	2.9	2.3	0.6	21
Sweden	4.2	0.7	3.5	83	0.1	-0.2	0.3	*
United Kingdom	2.9	0.8	2.1	72	0.5	0.2	0.3	60
Average	5.5	1.8	3.7	67	2.4	1.2	1.2	50

Source: Same as Table 2, this article, p. 129.

*Base is too small to be meaningful.

countries experienced a sharply decreased rate of total factor productivity growth in the 1970's. Though proof is hard to show that energy disadvantage is the sole or major factor in this decline, the ubiquitousness of the adverse comparisons provides at least an intuitive basis for this belief.

IS PRODUCTIVITY GROWTH DECLINING?

The decline in the rate of productivity growth in the 1970's is almost undeniable. Starting even as early as 1966 there has been a decline in the trend rate of productivity growth. In 1979 and 1980, there was a decline even in the level of productivity. The figure for this article shows the deviation of annual change in output per person employed from the long-term trend growth rate of 3.2 percent for the private business sector in the United States. The 1950's appear on the diagram as years of slow productivity growth, a feature relieved by the expansion policies of the Kennedy-Johnson years.

The lagging growth of that period, however, becomes far less disadvantageous when it is compared with the experience of the 1970's. This is clear also from Table 5 which shows the changes in output per hour paid for, for all persons in several broad subsectors. John W. Kendrick's table, reproduced here as Table 6, makes the same point showing real product per unit of labor rising at a rate of 3.5 percent per year for 1948-'66, 2.1 percent over 1966-'73, and 1.1 percent over 1973-'78. Total factor productivity during the same periods increased at rates of 2.8, 1.6, and 0.8 percent, respectively.

One observation worthy of note in Kendrick's table is that productivity slowdown precedes the 1973 OPEC oil restrictions. During the period 1966-'73, the quantity of labor increased at an annual rate of 1.4 percent compared with 0.4 percent for the period of 1948-'66. This accelerated rate of labor input was accompanied by a somewhat smaller acceleration of capital input, from 2.8 percent per year to 3.3 percent per year. Despite this, the real gross product rate of growth declined from 3.9 to 3.5 percent and total factor productivity growth declined from a 2.8 percent annual rate to a 1.6 percent annual rate.

A further interesting point is shown in Table 7, which provides estimates of output per hour worked by industry sector for subperiods 1950-'77. While the productivity decline is almost general, there is considerable variability among sectors. There has been a dramatic decline in labor productivity in mining, associated in earlier years with lagging output growth and in more recent years with management practices, mine safety legislation, and poor labor relations. Construction

TABLE 5. Labor Productivity Growth 1948-'78 (annual percentage change)

Sector	1948-'55	1955-'65	1965-'73	1973-'77	1977-'78
Private Business Economy	3.4%	3.1%	2.3%	1.0%	0.4%
Nonfarm	2.7	2.6	2.0	0.9	0.6
Manufacturing	3.3	2.9	2.4	1.5	2.5
Nonmanufacturing	2.4	2.4	1.7	0.6	-0.3

Source: **Economic Report of the President 1979**, p. 68.

Note: Data relate to output per hour paid for, for all persons.

has been a relatively depressed industry since the late 1960's, and utilities have been particularly affected by environmental regulations and the energy shock, both of which have been major absorbers of new capital investment. Communications and finance appear as the only sectors in which productivity has improved over the years.

Each of these industries could, of course, be the subject of a separate study. Different factors relevant to productivity change impinge with differing intensities on different industries, but there is a general feeling that the effects of regulations, energy, rate and stability of growth of output, and the level of research and development are important.

TABLE 6. Sources of Growth in Real Gross Product for the United States Domestic Business Economy by Percentage Points for Selected Subperiods 1948-'78

Source	Average Annual Percentage Rates of Change		
	1948-'66	1966-'73	1973-'78
Real gross product	3.9%	3.5%	2.4%
Factor input — total	1.1	1.9	1.6
Labor	0.4	1.4	1.3
Capital	2.8	3.3	2.3
Real product per unit of labor	3.5	2.1	1.1
Capital/Labor substitution	0.7	0.5	0.3
Total factor productivity	2.8	1.6	0.8
Sources of total factor productivity growth; (percentage point contribution)			
Advances in knowledge	1.4	1.1	0.8
Research and development stock	0.85	0.75	0.6
Informal	0.3	0.25	0.2
Rate of diffusion	0.25	0.1	—
Changes in labor quality	0.6	0.4	0.7
Education and training	0.6	0.7	0.8
Health	0.1	0.1	0.1
Age/Sex composition	-0.1	-0.4	-0.2
Changes in quality of land	--	-0.1	-0.2
Resource reallocations	0.8	0.7	0.3
Labor	0.4	0.2	0.1
Capital	0.4	0.5	0.2
Volume changes	0.4	0.2	-0.1
Economies of scale	0.4	0.3	0.2
Capability utilization rate	—	-0.1	-0.3
Net government impact	—	-0.1	-0.3
Services to business	0.1	0.1	0.1
Regulations	-0.1	-0.2	-0.4
Actual/Potential efficiency, and n.e.c.*	-0.4	-0.6	-0.4

Source: John W. Kendrick, "Survey of the Factors Contributing to the Decline in U.S. Productivity Growth" in **The Decline in Productivity Growth,** Proceedings of a Conference held in June 1980, Federal Reserve Bank of Boston, 1980, p. 3.

*n.e.c. = not elsewhere classified.

Some authors, such as Kendrick, also insist that the degree of unionization is a further deterrent to productivity growth. He points to the union practices of limiting work, featherbedding, and union restriction on freedom of management to innovate, to introduce new machinery or new techniques of organization, as ways in which unions impede productivity advance. In recent years there has been a revival of interest in this topic, and readers are referred back to the December 1981 issue of the **Business and Economic Review** for an up-to-date survey by John Addison of writings and conclusions in the ongoing debate.

"Changes in total factor productivity" is, in a sense, a misuse of words. If we include all factors as inputs, then the output/input ratio will always be unity, with two exceptions. The first is shifts in factors among outputs of varying value added per unit of input. The compositional shifts of labor from agriculture to manufacturing and services and from domestic services to other activities exemplify underemployment of resources at certain stages of economic development. The second exception arises from economies and diseconomies of scale. If returns to scale are diminishing, then doubling input will less than double output, so that productivity will fall.

Therefore, when we talk of total factor productivity in Kendrick's sense we are referring only to labor and tangible capital as factors. This productivity, in turn, will be influenced by many other factors that determine their efficiency in the production process.

We can get at least some idea from Table 6 of the factors involved in the declining productivity growth. Kendrick starts with a basic decrease in the annual rate of total factor productivity growth of 1.2 and 0.8 percentage points between 1948-'66 and 1966-'73 and 1966-'73 and 1973-'78, respectively. If we compare his columns for 1948-'66 and 1973-'78, we can see that of the total decline of productivity growth of 2.0 percentage points he divides up responsibility for this decline in the following way:

Advances in knowledge	0.6
Changes in labor quality	-0.1
Changes in quality of land	0.2
Resource reallocations	0.5
Volume changes	0.5
Net government impact	0.3
Actual/potential efficiency, and n.e.c.	—
Total	2.0

These general categories include all the factors we are so accustomed to hearing as part of supply-side economics. "Advances in knowledge" relates to the reduced emphasis on research and development since the 1960's. In the mid-60's, research and development expenditures accounted for about 3.09 percent of GNP but declined to about 2.2 percent of GNP by 1978. A further factor in this general concept is the rate of diffusion of new knowledge. Kendrick attributes the decreased rate of diffusion to a slowing down of real capital formation, which in turn is a result of decreased real rates of return on investment, accelerating inflation, and increased regulations over the whole productive process.

Another major item, accounting in this schema for 25 percent of the decline, is a decreased efficiency in resource reallocation. Under this heading Kendrick lists only the shifts occurring in our economy among industries. These occur as new technology and shifting consumption patterns alter the structure of the employment mix of capital and labor over time. The 1960's saw the last major shift of labor out of agriculture where productivity of labor was low but productivity growth was high. They saw also the continuing expansion of services, such as recreation, entertainment, medical, and personal, and the entire government sector. Here productivity growth tends to be less easily achieved than in goods producing activities such as manufacturing and, traditionally, mining.

The general category title "volume changes" also accounts in Kendrick's schema for about one-quarter of the total decline. The decrease in the rate of growth of real output certainly is one element in this. Another is the general state of stagflation which has characterized the 1970's. Each boom dissipates before excess capacity disappears. In the fall of 1981, for example, the weak boom ended even though capital capacity utilization stood at 80.0 percent and 7.0 percent of the labor force was still unemployed.

In the 1950's, we experienced a similar set of unfavorable circumstances. At that time Walter Heller's insight into the "full employment budgetary surplus" and the consequent "fiscal drag" helped to give new life to the economy. Today, however, relief by influencing demand is, at best, dubiously arguable, and only the longer term remedies from the supply side promise, but certainly do not guarantee, improvement.

The final major category Kendrick describes is government impact. Here the important change has been the growth in regulation involving factor use, product safety, and environmental impact in both production and consumption. Estimates of the significance of regulation in productivity decline vary, but there is general agreement that it is important. In Kendrick's schema it accounts for 15 percent of the total productivity growth lag.

Murray Weidenbaum, the current Chairman of the Council of Economic Advisors, estimated in 1978 that approximately $10 billion of capital spending each year is devoted to meeting requirements imposed by economic and social regulations. Robert Crandall, in a fine paper on the effects of regulation on productivity growth, says that regulation is "indicted but not convicted." However, he stresses the important possible impact of regulations both in absorbing capital for the achievement of performance standards and in diverting capital to nonregulated uses through setting higher performance standards for new capital formation than for existing plant and structures. He ends his paper with a warning that the danger exists that by the time we understand the effects of present day regulations we may have so discouraged investment in new facilities in basic industries that the revival of those industries will be difficult.

TABLE 7. Productivity Growth by Industry 1950-'77 (annual percentage change)

Industry	1977 Output Share	1950-'65	1965-'73	1973-'77
Agriculture	2.9%	4.9%	3.6%	3.0%
Mining	1.5	4.3	1.9	-6.1
Construction	4.3	3.4	-2.1	0.3
Manufacturing				
Nondurable	9.9	3.2	3.3	2.2
Durable	14.4	2.5	2.2	1.2
Transportation	3.9	3.0	2.9	1.0
Communications	3.2	5.3	4.6	6.7
Utilities	2.3	6.1	3.5	0.2
Trade				
Wholesale	7.3	2.6	3.4	-0.8
Retail	10.0	2.3	2.1	0.8
Finance, Insurance and Real Estate	15.4	1.6	0.2	2.3
Services	12.0	1.2	1.7	-0.3
Government	12.5	0.4	0.5	0.1
All Industries Current Weights	100.0	2.7	2.0	1.1

Source: Same as Table 5, this article, p. 71.

Note: Growth data relate to output per hour worked, for all persons.

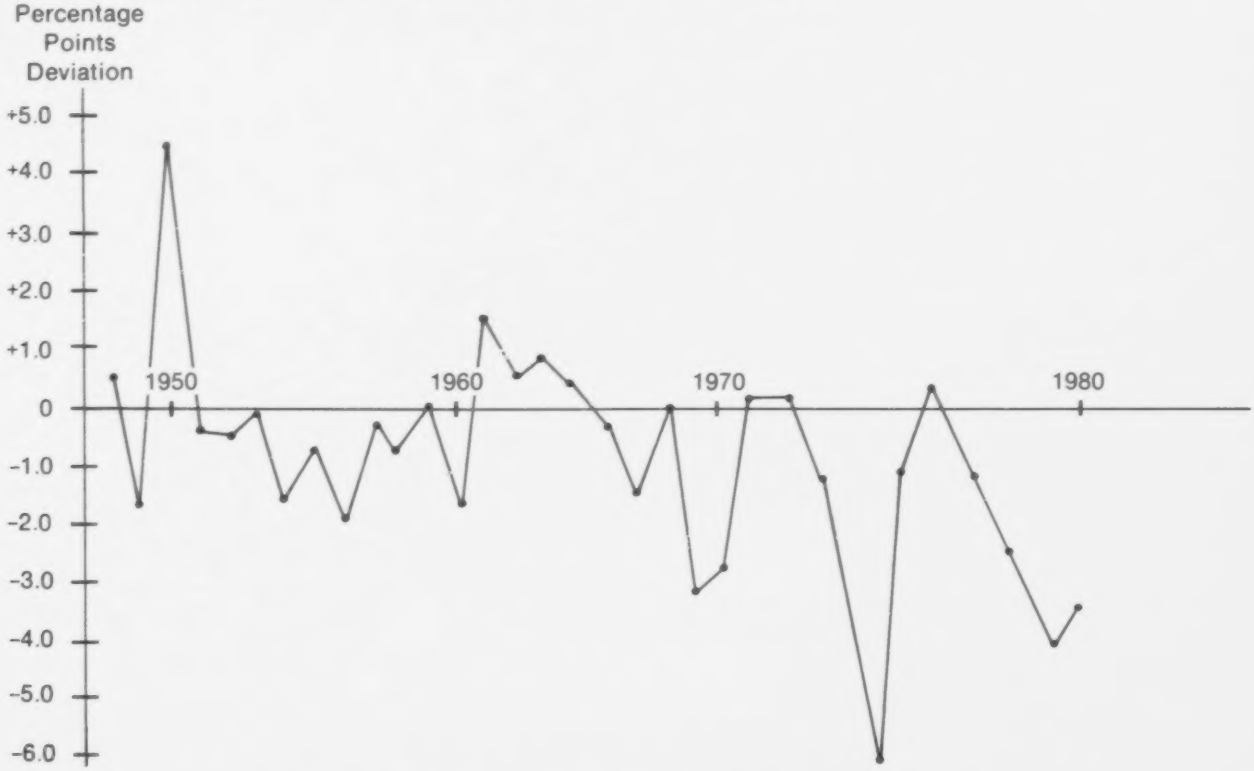
THE FUTURE

What future do we see for productivity growth? Many writers feel that the important productivity concept is labor productivity. This is because of the historically strong relationship that has existed between the rate of growth of labor productivity (in the sense of output per hour worked, or per hour paid for, or per person) and the rate of growth of employee compensation per hour paid for. There has also been a fairly consistent relationship between the general price level, the money wage rate per hour paid for, and the rate of growth of aggregate labor productivity. In this loose sense, some relief might arise in the 1980's from the deceleration of the rate of growth of the labor force. This smaller growth rate will result from the passing through of the "baby boom" which ended in the early 1960's and possibly some deceleration of the rate of entry into the labor force by married women.

However, this relief, as expressed in a possible acceleration of labor productivity, is predicated on a halting, or, if possible, a reversal of the decline in the rate of growth of capital. This is the single crucial need. But — it is not easy to prescribe the condition that will ensure it. Its satisfaction is caught up in a complex web of factors, at least a part of which is related to the continuing effort on the part of the economy to adjust to the increased price of energy. Inflation; the instability of economic activity; the lower trend growth rate of potential output resulting from higher energy prices; the falling rates of return on investment, both before and after tax; and the growing and seemingly unmanageable government deficits are a part of this web.

The increased price of energy will continue to have a major impact on productivity. It has caused inflation, hurt our terms of trade, reduced the rate of growth of potential output, decelerated the growth of our real income, caused internal shifts in the distribution of income, and interacted with rising prices on institutional shortsightedness and inflexibility to decrease our international competitiveness, as in autos and steel. It has also disturbed the relationship of complementarity that energy

FIGURE. Deviations of Annual Change in Output per Person Employed From Long-Term Trend Growth Rate of 3.2 Percent for the Private Business Sector in the United States 1948-'80.



Source: **Employment and Training Report of the President, 1981,** Table G-1.

had with capital and labor when energy was abundant and cheap. Since much of our capital stock, both produce and consumer, is geared to cheap energy, clearly the process of capital and labor usage to substitute for energy will be a continuing process at least for the next decade.

Therefore at least one element in the future of productivity growth relates to energy. The search must continue for a cheap source of energy, and progress must be made in the search for energy efficient innovations. Either of these would allow a return to higher productivity growth levels, but at this time, we seem to be a considerable way from achieving either of these means of relief.

Some relief might be in sight from the apparent stabilization in the dollar price of oil as reflected in recent OPEC decisions. Should this prove to be a protracted condition, then the 1980's will become progressively better. Should this not be true, then, quite apart from a recurrence of an oil embargo or similar supply shock, the 1980's will repeat the earlier decade. Meanwhile, we have yet to learn the simple lesson of the 1970's that inflation has real effects. For many years economists argued that the world of money was a separate one from the real world, and they spoke of the "veil of money." This has found modern day expression in the writings of the "rational expectations" school and the monetarists. The adjustments to the inflation of the 1970's have been remarkably slow. For several years in the 1970's real interest rates, that is, nominal interest rates deflated by the actual rate of inflation, were negative. The plight of our savings and loan institutions is testimony to the failure of our transactional arrangements to keep pace with external events. Government taxation and spending policies have been subject to the same inertia, the incidence of burdens and benefits from tax and spending programs shifting arbitrarily as a result of inflationary price and money income movements. Company policies have also been subject to the same inertia resulting in faulty depreciation, dividend and investment policies which have contributed to the decline in the rate of real net investment.

This inertia is a separate factor from the uncertainty that high inflation, high variablity of inflation, and changing monetary and fiscal policies generate. Inflation continues to be an important factor in our lagging productivity growth, one to which there is still no ready answer.

As to our plans for better economic housekeeping, the Reagan program provides only a bare beginning. The reforms of company taxation were in the right direction, but the evidence appears to be increasing that the income tax reforms were not. The deficit's role in absorbing savings is more significant than the tax cuts' role in generating them.

In the area of regulation, there are strong fears that we are only beginning to feel the impact of the higher standards currently in force. One estimate states that the 10-year cost of major regulations promulgated between 1975 and 1979 will be $300-600 billion. Beyond that is the unmeasured impact arising from the deterrent effect of such regulations on new investment. Clearly there is a need to reevaluate the whole regulatory program, substituting charges and taxes for specific pollution allowances, or work practices, and for specific technical stipulations.

If redistribution to OPEC can persuade us to attain a healthier level of economic management, then the trauma of the 1970's may well bring substantial long-run benefits.

The Employer and Employment Laws

By James J. Baldwin, LL.D.

The Employer and Employment Laws is a regular feature. Suggestions and inquiries by readers are invited.

THE NUTS AND BOLTS OF AGE DISCRIMINATION LIABILITY IN EMPLOYEE DISCHARGE CASES

Circuit Judge Field, in the United States Court of Appeals for the Fourth Circuit, recently stated:

> This case . . . portends serious problems for employers in this circuit for, to me, the caveat is clear that any management reorganization which adversely affects an employee within the age bracket of forty to seventy years will

BUSINESS AFFILIATES

The Business Affiliates program of The USC-Business Partnership Foundation, chartered in 1977, is designed to attract business investment and participation in the programs of the College of Business Administration. Advantageous to both, this program benefits the business community through better prepared graduates and higher levels of professionalism of employees who participate in the graduate or continuing education programs, and the college through a new sense of relevancy and realism from corporate and business involvement.

Membership funds supplement university appropriations and provide for faculty development, student aid, and program and research support, as well as development of a professional business library within the college. It is the foundation's hope that this will prove to be an ever-expanding partnership program for the college and the business community.

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Ernst & Whinney
Fidelity Federal Savings & Loan Assoc.
First-Citizens Bank & Trust
    Company of S.C.
First Federal Savings & Loan
    Assoc. of Camden
First Federal Savings & Loan
    Assoc. of Charleston
First National Bank in Orangeburg
First National Bank of S.C.
First Palmetto Bank
Fluor Corp. (Daniel International)
General Electric Co.
General Telephone & Electronics Corp.
Gerald R. Callahan
Greenwood Mills
Greenwood Packing Company
Greenwood Savings & Loan Assoc.
Greer Federal Savings & Loan Assoc.
Gregg-Graniteville, Inc.
Hergeth, Inc.
Horsman Dolls, Inc.
Inman-Riverdale Foundation
International Business Machines Corp. (IBM)
Intex Products, Inc.
Jeff Hunt Machinery Company
The Keenan Company
Lexington County Savings & Loan Assoc.
The Liberty Corporation
Lips Doran
MacEwen, Derrick, Stubbs & Stith
Mayfair Mills
C. C. McGregor & Company
Merrill Lynch, Pierce, Fenner & Smith, Inc.
Mutual Savings & Loan Association
    of Greenwood
National Bank of South Carolina
North Carolina National Bank
Oneita Knitting Mills
Owens-Corning Fiberglas Corp.
Peat, Marwick, Mitchell & Company
Peoples Federal Savings & Loan Association
Price Waterhouse & Company
Reeves Brothers, Inc.
Richtex Corporation
Riegel Textile Corporation
Security Federal Savings & Loan Assoc.
Seibels Bruce & Company
Shakespeare Company
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S. C. Federal Savings & Loan Association
S. C. National Bank
Southern Bank & Trust Company
Southern Bell Telephone & Telegraph Co.
Springs Mills, Inc.
Standard Federal Savings & Loan Association
State-Record Company
Synalloy Corporation
Union Carbide Corporation
Uniroyal, Inc.
U. S. Shelter Corporation
Wachovia Bank & Trust Company
Wellman Industries, Inc.
Wilbur Smith & Associates

expose the employer to a costly and disruptive lawsuit.[1]

Recent age discrimination cases demonstrate that Judge Field was quite correct. The discharge or termination of an employee in the protected age range of 40 to 70 carries with it the very real possibility that the employee will file a lawsuit. Moreover, if such a lawsuit is filed, the employer has little chance of disposing of it prior to trial. Once in court, a plaintiff bears the ultimate burden of proving that age played a part in the discharge. While many employers are able to win at this stage, they must still endure the expense of a trial in order to avoid liability.

The Age Discrimination in Employment Act (ADEA) expressly permits an employer to discharge or terminate an employee within the protected age range on the basis of reasonable factors other than age or for good cause.[2] The courts treat the "reasonable factors" and "good cause" exceptions as matters of rebuttal to be argued by an employer in answer to a plaintiff's prima facie case. The court cases that allow an employer to prevail on summary judgment prior to trial based on such defenses are extremely rare.[3]

In addition to the expense of a jury trial, liability for liquidated damages poses a significant risk to employers in age discrimination cases.[4] ADEA plaintiffs may recover their lost wages and benefits and an equal amount as liquidated damages by proving (1) a violation resulting in lost wages, and (2) that the employer's conduct was "willful." The courts routinely find the employer's conduct to be willful although the employer does not know the discharge would violate the ADEA,[5] and regardless of his good faith.[6] The fact that an employer is risking "double damages" by discharging an employee in the protected age bracket, particularly if the employee is a highly paid executive, makes it critical that such discharges be legally reviewed before the employee is notified of his discharge.

The federal courts rely primarily on the Supreme Court's opinion in **McDonnell Douglas Corp. v. Green,**[7] a case involving a race claim under Title VII of the 1964 Civil Rights Act, for the standards governing the order and allocation of proof in age discrimination cases. In **McDonnell Douglas** the Supreme Court set forth a three-step process: (1) the plaintiff must first make out a prima facie case; (2) the employer must then "articulate" some legitimate nondiscriminatory reason for the action in question; and (3) the plaintiff must then be given an opportunity to show that the stated reasons are pretextual.[8]

In order to make out a prima facie case, a plaintiff must ordinarily prove that (1) he was in the protected age group; (2) he was qualified for his position; (3) he was nonetheless fired; and that (4) the company sought a replacement.[9] In most cases, two elements — that the plaintiff was within the protected age group and that he was discharged — normally are stipulated. The courts are liberal in finding the plaintiff to be qualified for purposes of making out a prima facie case, often basing the finding on nothing more than length of service.[10]

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[1] **Spagnuolo v. Whirlpool Corp.,** 641 F.2d 1109, 25 FEP Cases 376 (4th Cir. 1981). (Field dissenting.)

[2] 29 U.S.C. § 623(f).

[3] **Simmons v. McGuffey Nursing Home,** 619 F.2d 369, 23 FEP Cases 199 (5th Cir. 1980); **Kephart v. Institute of Gas Technology,** 630 F.2d 1217, 23 FEP Cases 1412 (7th Cir. 1980); **Kapustka v. United Airlines, Inc.,** ___ F.Supp. ___, 25 FEP Cases 1283 (N.D. Ill. 1981).

[4] Portal to Portal Pay Act, 29 U.S.C. § 260.

[5] **Spagnuolo v. Whirlpool Corp., supra,** n.1; **Kelly v. American Standard, Inc.,** 640 F.2d 974, 25 FEP Cases 94 (9th Cir. 1981); **Smith v. University of North Carolina,** 632 F.2d 316, 23 FEP Cases 1739 (4th Cir. 1980).

[6] **Kelly v. American Standard, Inc., supra,** n.5; **Loeb v. Textron, Inc.,** 600 F.2d 1003, 20 FEP Cases 29 (1st Cir. 1979); **contra, Hays v. Republic Steel Corp.,** 531 F.2d 1307, 12 FEP Cases 1654 (5th Cir. 1976).

[7] 411 U.S. 792, 5 FEP Cases 965 (1973).

[8] **Id.** at 802-804.

[9] **Loeb v. Textron, Inc., supra,** n.6. This court made it clear that a plaintiff may also make out a prima facie case using direct evidence of age discrimination or circumstantial evidence that supports an inference of discrimination. This would include statistical evidence demonstrating an apparent policy to force older employees to retire early. **Stonjoev v. Abesco Services, Inc.,** 643 F.2d 914, 25 FEP Cases 355 (2d Cir. 1981).

[10] **Schofield v. Bolts and Bolts Retail Stores,** ___ F.Supp. ___, 21 FEP Cases 1478 (S.D. N.Y. 1979).

The replacement element, although one of the classic **McDonnell Douglas** factors, need not be shown in some instances, particularly in cases involving a reduction in force.[11] The trend is away from requiring this element in discharge cases and it is clear that the replacement need not be from outside the protected age range.[12] In one case, the court stated that the fact the replacement was 10 years older than the discharged employee would not preclude the plaintiff from making out a prima facie case.[13]

Once the plaintiff in an age/discharge case has made out a prima facie case, either under the **McDonnell Douglas** formula or by other methods, the burden then shifts to the employer to show his reasons for the discharge. The employer need only articulate some legitimate, nondiscriminatory reason for the discharge.[14] The employer's burden is one of production only: there is no requirement that the employer persuade the court that he was actually motivated by the proffered reasons.[15] The employer may rely solely upon subjective reasons at this stage.[16] Carefully supporting documentation is extremely helpful in overcoming evidentiary problems, although the absence of such documentation is not fatal to the employer's case.[17]

Once the employer rebuts the plaintiff's prima facie case, the plaintiff must then show the employer's stated reasons are pretextual, requiring proof of improper motive. The evidence presented to show pretext may consist of specific instances in which the plaintiff was treated differently from younger employees.[18] A pattern or practice of age discrimination may be demonstrated by testimony of similarly situated employees concerning the reasons for their discharge, or by statistical evidence regarding employment practices affecting employees over 40.[19]

Assuming the ADEA plaintiff is able to make out a prima facie case that is not sufficiently rebutted by the employer, or, if rebutted, is shown to be based on reasons that are pretextual, there is then a material issue of fact to be decided by the court or the jury. Where there may be a "mixed motive" discharge, the federal courts have held that it is not necessary for the plaintiff to prove that age was the sole factor in the discharge decision,[20] although it must be a determinative factor.[21]

In spite of all the court language on burden and allocation of proof in ADEA claims, the plaintiffs in those cases will rely on any and all factors available to create an inference that age was a factor in the discharge decision.[22] While the standard is used in jury instructions, if the inference of discrimination is strong enough, it is unlikely that many juries would distinguish between a determinative factor and a nondeterminative factor.

Due to the sensitiveness of this area of the law, employers should dismiss an employee within the protected age range only after a thorough legal evaluation of all the relevant facts and circumstances surrounding the proposed discharge. Although the employer may still be forced to expend time and money defending an age discrimination suit if the decision is made to discharge the employee, a legally substantiated decision will eliminate exposure to liability for reinstatement, backpay, and liquidated damages.

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[11] **McCuen v. Home Insurance Co.,** 633 F.2d 1150, 25 FEP Cases 1772 (5th Cir. 1981); **Haydon v. Rand Corp.,** 605 F.2d 453, 25 FEP Cases 12 (9th Cir. 1979); **Bonham v. Dresser Industries, Inc.,** 569 F.2d 187, 16 FEP Cases 510 (3d Cir. 1977), **cert. denied,** 439 U.S. 821 (1978); **Harping v. Continental Oil Co.,** 628 F.2d 406, 24 FEP Cases 1313 (5th Cir. 1980).

[12] **White v. Mississippi State Oil and Gas Board,** ___ F.2d ___, 26 FEP Cases 908 (5th Cir. 1981); **Moore v. Sears, Roebuck & Co.,** 464 F. Supp. 357, 19 FEP Cases 246 (N.D. Ga. 1979); **Wilson v. Sealtest Foods Div. of Kraftco Corp.,** 501 F.2d 84, 8 FEP Cases 749 (5th Cir. 1974); U.S. Dept. of Labor Regulations, 49 C.F.R. § 860.91(a).

[13] **Smith v. World Book — Childcraft,** 502 F.2d 96, 24 FEP Cases 771 (N.D. Ill. 1980).

[14] **Smith v. Farah Mfg. Co.,** 650 F.2d 64, 26 FEP Cases 1106 (5th Cir. 1981); **Board of Trustees v. Sweeney,** 439 U.S. 24, 18 FEP Cases 520 (1978).

[15] **Texas Dept. of Community Affairs v. Burdine,** ___ U.S. ___, 101 S.Ct. 1089, 25 FEP Cases 113 (1981); **Sutton v. Atlantic Richfield Co.,** 646 F.2d 407, 25 FEP Cases 1619 (9th Cir. 1981).

[16] **Mistretta v. Sandia Corp.,** 649 F.2d 1383, 26 FEP Cases 219 (10th Cir. 1981); **Loeb v. Textron, Inc., supra,** n.6.

[17] **Cova v. Coca-Cola Bottling Co.,** 574 F.2d 958, 17 FEP Cases 448 (8th Cir. 1978); **Needham v. Beecham, Inc.,** 515 F. Supp. 460, 26 FEP Cases 235 (D. Me. 1981).

[18] **Loeb v. Textron, Inc., supra,** n.6.

[19] **Harping v. Continental Oil Co., supra,** n.11. When statistical evidence is used, the disparities in treatment must be shown to be quite large. **Kephart v. Institute of Gas Technology, supra,** n.3.

[20] **Loeb v. Textron, Inc., supra,** n.6.

[21] **Kelly v. American Standard, Inc., supra,** n. 5; **Bentley v. Stromberg-Carlson Corp.,** 638 F.2d 9, 24 FEP Cases 1255 (2d Cir. 1981); **Smithers v. Bailar,** 629 F.2d 892, 23 FEP Cases 1206 (3d Cir. 1980); **Cleverly v. Western Electric Co.,** 594 F.2d 638, 18 FEP Cases 1335 (8th Cir. 1979).

[22] These may include the fact that the employer discussed early retirement benefits in the termination interview. **McCorstin v. United States Steel Corp.** 621 F.2d 749, 23 FEP Cases 320 (5th Cir. 1980); **Kerwood v. Mortgage Bankers Assoc.,** 494 F.Supp. 1298, 23 FEP Cases 459 (D.D.C. 1980).

Bottom Lines

By James B. Edwards, Ph.D., C.P.A., C.M.A., C.I.A., C.D.P.

Bottom Lines is a regular feature that brings attention to practical business taxes and accounting. Suggestions and inquiries by readers are invited.

LEASING UNDER THE ECONOMIC RECOVERY TAX ACT OF 1981

This month's column is devoted to only one subject: Leasing under the Economic Recovery Tax Act of 1981. Congress has provided special rules that permit businesses that acquire new equipment to transfer their tax benefits in exchange for lower financing rates or other compensation.

LINE ONE

Leasing is often used as a means of financing equipment acquisitions. Under previous IRS guidelines, a transaction had to meet a number of specific requirements to qualify for an IRS ruling characterizing it as a lease for purposes of allowing investment credits and capital cost recovery allowances to the nominal lessor. The Economic Recovery Tax Act of 1981 has created a safe harbor lease election that guarantees many of these transactions as a lease for federal income tax purposes.

All the parties to the lease must characterize it as such and elect to treat the lessor as the owner of the property in order to qualify for the safe harbor provisions. The lease agreement must specify to treat the arrangement as a safe harbor lease for income tax purposes and to apply the safe harbor provisions. The election is irrevocable, and the lessor and lessee must file information returns with their income tax returns. The information returns must be signed by both parties and include various identification information for both parties and the property. In addition, the following requirements must be met.

1. The lessor must be a corporation (other than a tax option corporation — Subchapter S — or a personal holding company), a partnership composed of such corporations, or a grantor trust, the grantor and beneficiaries of which are all either qualified corporations or qualified partnerships.

2. The lessor must have a minimum "at risk" investment of not less than 10 percent of the adjusted basis of the property (a) at the time the property is first placed in service and (b) at all times during the term of the lease.

3. The term of the lease (including all extensions) cannot exceed the longer of (a) 90 percent of the useful life of the leased property or (b) 150 percent of the Accelerated Depreciation Rate (ADR) midpoint class life of the leased property.

4. The property must (a) qualify for the investment credit, (b) be new when acquired, and (c) be leased within three months after it is placed in service.

5. In a sale-leaseback transaction, the lessor must purchase the property within three months of the date the lessee placed the property in service, and the lessor's cost

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cannot exceed the adjusted basis of the property in the hands of the lessee at the time of the lessor's acquisition. Transaction costs are omitted in the amount available for Accelerated Cost Recovery System (ACRS) deductions and Investment Tax Credit (ITC).

6. In addition, certain mass commuting vehicles that are financed by tax-exempt obligations qualify, even though they may not qualify for the ITC. Plus, costs to reconstruct property that would qualify for the ITC may qualify for safe harbor treatment, e.g., cost to reconstruct railroad cars.

7. If the lessee acquires the qualified leased property at any time during the lease, safe harbor requirement (2) is not met, and the lessee would be treated as the owner of the property. Thus, on any subsequent disposition of such property by the lessee, it would be subject to ITC and recovery allowance recapture under Code Sections 47 and 1245. In addition, a special Section 1245 recapture rule applies to a lessee's post lease acquisition of the leased property and later disposition. This rule computes Section 1245 recapture on the later sale by including the lessor's recomputed basis adjustments. Of course, any recapture by the lessor on the sale to the lessee will not again be recaptured by the lessee.

If all the safe harbor lease election requirements noted above have been met, no other factors will be taken into account in determining whether the transaction is a lease. The transaction qualifies as a lease for federal income tax purposes despite any other characteristics.

LINE TWO

Congress apparently made this move to encourage companies to acquire new equipment even when they would not be able to use fully the additional tax benefits associated with the new depreciation and investment credit rules of the act. The encouragement is derived from the opportunity to sell unused tax benefits through a qualified transfer to some other qualified taxpayer who can use the tax benefits currently.

The lessee may provide the debt or guarantee the lessor's debt except for the required 10 percent minimum investment, (2), above. The agreement may include a bargain purchase option (e.g., $1.00) and/or a requirement that the lessee purchase the property at a fixed price at the end of the lease term. There is no requirement that the lessor realize a pretax profit or have a positive cash flow from the transaction.

LINE THREE

Businesses will find it beneficial to elect to come under the safe harbor rules in several different situations. These include the traditional single-investor leases and leveraged leases where the lessee desires a fixed price purchase option, which may or may not be at a "bargain" price. These structures and the tax results are relatively well developed. Under the act new leasing structures will be designed to take maximum advantage of the safe harbor rules by transferring tax benefits without transferring legal title or interest in the residual value.

To illustrate some of these structures, assume User, Inc. has just acquired property and has little use for tax deductions and/or additional investment credits. User, Inc. plans to use the property and expects the property to maintain its value for an extended period. The property has been delivered and has been in use for two months.

Stripout

Under this alternative, User, Inc. (lessor/sublessee) enters into a five-year lease agreement with corporate taxpayer Tax Benefits, Inc. (lessee/sublessor). After electing to pass through the ITC to Tax Benefits, Inc. under Code Section 48(d), User, Inc. (or a subsidiary of User, Inc.) agrees to lease the property back from Tax Benefits, Inc. under identical terms, with the sole exception being the total rentals to be paid. The rentals paid by Tax Benefits, Inc. to User, Inc. under the primary lease will exceed the sublease rentals paid by User, Inc. to Tax Benefits, Inc. by an amount that, on a present value basis, compensates User, Inc. for having transferred the ITC to Tax Benefits, Inc. This excess amount will be tax deductible to Tax Benefits, Inc. and taxable income to User, Inc.

The parties could agree that the differential in rental payments be paid to User, Inc. up front and that all future rental obligations be offset. In this way, no additional funds need be exchanged. Each party will report rental income and rental expense during the agreed lease term as if actual payments were made. Or, if Tax Benefits, Inc. were concerned about the possibility of ITC recapture due to some unforeseen event, it might defer payment of the rental differential and pay it only as the ITC is earned.

OBSERVATION: This structure could be more advantageous than a refundable ITC. Assuming User, Inc. is in a tax loss position, the rental differential may not be reduced by tax (even though a reduction of loss carry-overs would occur), and the total net cash received might easily exceed the amount of ITC that User, Inc. might have been entitled to.

Wash Lease

Under this alternative, User, Inc. and Tax Benefits, Inc. negotiate a purchase price for the ITC and tax deductions, which User, Inc. cannot use. The agreed price becomes the cash "down payment" to User, Inc. in the agreed sale/leaseback transaction. The difference between that amount and User's basis in the property is treated, by agreement between the parties, as an amount to be paid in installments, with interest, by Tax Benefits, Inc. to User, Inc. over the lease term. Tax Benefits, Inc. claims ITC and ACRS cost recovery deductions, as it is entitled to do since, under the safe harbor rules, it is treated for tax purposes as the owner and lessor of the new Section 38 property.

Meanwhile, the rental payments by User, Inc. are, by agreement, set to equal the debt service payments by Tax Benefits, Inc., and these exactly offset or "wash." The parties report income and deductions, however, as if the payments were actually made and, at the end of the lease term, User, Inc., who has retained legal title throughout, exercises its option to purchase the property for tax purposes for a nominal price.

Third Party

Assume User, Inc. needs to buy a $1,000,000 asset that has an economic useful life of 10 years and an ACRS recovery period of 5 years. User, Inc. currently cannot use any of the benefits of ACRS. If User, Inc. provides 20 percent of the purchase price, Last National Bank will finance the balance at an interest rate of prime plus 4 percent. Under these circumstances, User, Inc. makes a substantial down payment, pays a high rate of interest, and gets no tax benefits from the transaction.

Under the safe harbor provisions of the act, the transaction can be structured as follows. Last National Bank has a leasing subsidiary, Leasit, Inc. So, Leasit, Inc. agrees to buy the property and lease it to User, Inc. for nine years. Leasit, Inc. makes a $100,000 investment in the property; Last National Bank finances the $800,000 balance. Leasit, Inc. charges User, Inc. a rental fee that reflects an interest rate of prime plus 1 percent.

User, Inc. has (a) cut its down payment in half and (b) substantially reduced its cost of borrowing money. Last National Bank, through it's subsidiary (Leasit, Inc.), gets a $100,000 investment credit so that it effectively has no investment in the property. Further, Leasit, Inc. can expense the asset off over 5 years. The income it earns from the tax savings offsets the lower earnings from the reduced interest rate charged to User, Inc.

LINE FOUR

Corporations may use the safe harbor provisions to purchase tax losses and/or credits near the end of the tax year to bring their actual tax liability down to a level where the estimated tax payments they have made during the year will protect them from any underpayment penalties. Under the act, the new penalty rates are 20 percent, nondeductible, and some of the previous escape rules have been modified.

The new provisions can also be used to provide certainty with respect to the tax treatment of leasing transactions that may or may not be treated as leases under nonsafe harbor rules. For example, some fixed price purchase options may or may not be a clear bargain. Another example is the open-ended automobile lease in which the exit payment is not always readily determined in advance.

LINE FIVE

Although these leasing provisions are designed to help corporations with net operating loss and investment credit carry-overs, any corporation can use this technique. Thus, profitable corporations may find these structures an attractive consideration in arranging asset acquisitions.

There can be many variations to these transactions, and many new structures will, no doubt, be developed as taxpayers become more familiar with the rules. The variety of structures seems limited only by imagination.

LINE SIX

There are some computer programs for planning and analyzing safe harbor leasing transactions. You may contact the author, by letter, for more information about such programs.

You should contact your tax and financial advisors concerning these new and important federal tax considerations dealing with lease arrangements. Remember, timing is critical in this case. You cannot make the safe harbor rules work for you three months after the assets have been placed into service. Also, ACRS and safe harbor leasing rules are not applicable for some state income tax purposes — namely, South Carolina.

* * *

Much more to come in the future . . . some practical matters will be explored in depth . . . others will merely be identified . . . please share your ideas, questions, answers, etc. — just send them to Dr. James B. Edwards, College of Business Administration, The University of South Carolina, Columbia, South Carolina 29208.

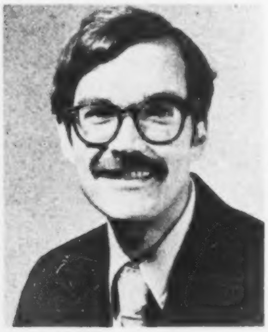
A Profile of South Carolina Automobile Repair Complainants

By Stephen A. Graham

Complaints about automobile maintenance and repair continue to be the single greatest source of consumer problems reported by consumer protection agencies. This is certainly true in South Carolina. Since the State Department of Consumer Affairs began to receive consumer complaints in 1975, it has had more about motor vehicles than any other product or service.

In order to analyze the problem of automobile repair complaints, the South Carolina Department of Consumer Affairs did two things. First, it opened its complaint files to The University of South Carolina so the College of Business Administration could survey complainants about their auto repair problems. Second, in cooperation with the Office of the Attorney General for the State of South Carolina, it conducted a series of public hearings in 12 cities and towns throughout the state between October 29 and November 15, 1979.

This article discusses the results of the survey and the hearings. Both the hearings and the survey suggest the need for legislation to help remedy the problem of automobile repair complaints. In addition, the survey indicates the need for further research with respect to the relationship between race, sex, and education and the behavior of respondents who have automobile repair complaints.



Dr. Stephen A. Graham, formerly Executive Assistant of the South Carolina Department of Consumer Affairs where he served as head of the Complaint Section, is now employed in full-time teaching at Voorhees College. He earned an A.B. Degree at Davidson College and M.A. and Ph.D. Degrees in Political Science with honors at Duke University. Dr. Graham has also served as a member of the Political Science faculties of North Carolina State University and California State College. His publication **Unjustified Complaints** was delivered at the 23rd Annual Conference of the American Council on Consumer Interests in Denver in 1977, and he was called to testify before the Federal Trade Commission hearing concerning regulations on the sale of used motor vehicles that same year.

SURVEY AND RESPONDENTS

The survey was designed by Dr. William O. Bearden, Associate Professor of Marketing at The University of South Carolina.[1] Dr. Bearden mailed questionnaires to those consumers who had filed written complaints with the South Carolina Department of Consumer Affairs about automobile repair problems. Of these, 265 people responded.

Table 1 analyzes the age, sex, race, education, and income of the 265 respondents. The mean age was 39. Almost as many women as men returned the survey. The other data in the table reveal that the respondents were predominantly white, well-educated (71 percent had attended college and 40 percent were college graduates or had received graduate training) and middle-class (the median annual combined family income was $18,604). This finding is consistent with results of other studies of consumer complaints.

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[1] William O. Bearden, Melissa Crockett, and Stephen A. Graham, "Consumers' Propensity-to-Complain and Dissatisfaction with Automobile Repair," **Proceedings of the Annual Conference on Consumer Satisfaction, Dissatisfaction, and Complaining Behavior** (1979).

ACTION TAKEN BY RESPONDENTS AND REASONS FOR THEIR DISSATISFACTION

Since the individuals who responded to the survey had already filed written consumer complaints with a government agency, it is not surprising that 84 percent of them stated that they had gotten "good and mad" about service, repairs, or maintenance performed on their cars. Nearly all respondents who had gotten mad had complained directly to the management or service personnel responsible for the unsatisfactory work. However, only 43 percent of the 265 respondents indicated that their complaints had been resolved satisfactorily by management or service personnel. Perhaps for this reason many of them took other action, including complaining to friends or relatives; reporting their complaints to the Better Business Bureau, a government agency, or a newspaper; and/or contacting a lawyer. Table 2 indicates the number of respondents who took such action and the percentage of the total sample represented by each type of action.

TABLE 1. Age, Sex, Race, Education, and Income of Respondents

Factor	Number of Responses	Percentage of Sample Making Response*
Age		
18-29	85	32%
30-39	67	26
40-49	50	19
50-59	35	13
60-69	22	8
70-79	6	2
Total	265	100%
Sex		
Male	138	52%
Female	127	48
Total	265	100%
Race		
White	199	75%
Nonwhite	66	25
Total	265	100%
Education		
High School or Less	22	9%
High School Graduate	54	20
Some College	81	31
College Graduate	49	18
Graduate Training	59	22
Total	265	100%
Income		
To $3,999	16	6%
4,000- 7,999	26	10
8,000-11,999	54	20
12,000-15,999	36	14
16,000-24,999	60	23
25,000-29,999	38	14
Over 30,000	35	13
Total	265	100%

*Sample size = 265.

TABLE 2. Action in Addition to Verbal Complaints

Action	Number of Responses	Percentage of Sample Making Response*
Complain to friends or relatives	158	60%
Report to Better Business Bureau, government agency, and/or newspaper	82	31
Write company	81	31
Boycott business	63	24
Contact lawyer	48	18
Refuse to pay	34	13
Other	68	26
Total	534	

*Sample size = 265.

In response to the open-ended question, "What was the major reason for your dissatisfaction?" 39 percent of the consumers cited poor quality workmanship. An additional 21 percent stated that the problem had not been remedied, that the specific repair(s) requested had not been performed, or that more than one visit had to be made to the repair shop for the same problem. When the respondents were given limited choices for factors that contributed to their dissatisfaction with their single most unsatisfactory auto repair experience, the replies were more specific. Table 3 includes the number of respondents who checked each factor and the percentage of the sample represented by these responses.

PUBLIC HEARINGS

The consumers who testified at the automobile repair hearings made similar complaints. Of the 130 persons who testified at the 12 hearings, 86 (2/3) were consumers. The remainder were representatives of auto repair businesses (independent garages, new car dealerships, or service stations), faculty members at technical colleges, attorneys, members of the South Carolina General Assembly, or others who could not be identified on the basis of their testimony.

The 86 consumers who testified made a total of 110 complaints about automobile repairs. Table 4 summarizes these complaints.

The most common complaint was that a car that had been taken to a mechanic for repair either had not been repaired at all or had been repaired improperly so that the car owner had to return the automobile to the same mechanic or to another mechanic for the same repair. In some cases consumers complained that their cars were in worse condition **after** being repaired. Others stated that the mechanic had diagnosed the repair problem incorrectly or that he had been negligent in making repairs.

The second most frequently expressed complaint at the hearings was that consumers had to pay for parts and/or labor to repair new automobiles still covered by the manufacturer's warranty. Some of these consumers stated that there was a design defect in their cars while others thought their automobiles had been negligently assembled at the factory. Finally, there were consumers who alleged that their new cars had not been properly serviced by the dealer before they were purchased. All of these consumers thought their automobiles should have been repaired at the manufacturer's or dealer's expense.

The remaining 28 complaints (25 percent of the total) included a variety of problem areas. These were overcharging and bills in excess of estimates; unnecessary or unauthorized repairs; misrepresentation by an automobile dealer of the condition of, or the equipment available on, the cars he sells; the inconvenience of being without an automobile while it is being repaired; a dealer's denial of liability for parts stolen while a car was in his possession; and the failure of a mechanic to return to a consumer used parts he had replaced.

TABLE 3. Factors Contributing to Dissatisfaction

Factor	Number of Responses	Percentage of Sample Making Response
Careless, unprofessional service	132	50%
Warranty not honored	101	38
Service not completed at time agreed upon	99	37
Problems worse after repair	98	37
Inferior parts and materials	62	23
Charge for work not done	62	23
Misleading ads	47	18
Bill exceeding estimate	45	17
Excessive price	35	13
Unauthorized repairs	28	11
Charge for parts not furnished	25	9
Credit terms misrepresented	9	3
Total	743	

*Sample size = 265.

TABLE 4. Complaints of Consumers Who Testified at Hearings

Complaint	Number of Responses	Percentage of Sample Making Response*
Repairs not made	60	55%
Warranty not honored	22	20
High cost of repair	10	9
Unnecessary or unauthorized repairs	6	5
Misrepresentation by dealer	6	5
Inconvenience	4	4
Parts stolen	1	1
Parts removed not returned	1	1
Total	110	100%

*Sample size = 265.

REPAIR FACILITY RESPONDENTS WOULD USE

In addition to questions about their single most unsatisfactory auto repair experience the survey also included the query, "If your car were to need work today, which of the following actions would you most likely take?" Table 5 lists the eight alternatives respondents were given from which to choose

The most frequently indicated actions chosen by at least 60 of the 265 respondents were (1) take car to regularly used independent repair shop; (2) take car to regularly used automobile dealership; (3) compare prices and services of several businesses; and (4) ask friends, family, or neighbors for advice.

RACE, SEX, AND EDUCATION OF RESPONDENTS WHO COMPLAINED AND TOOK FURTHER ACTION

Once the surveys were compiled, several of the respondents' socioeconomic characteristics were cross tabulated. The sex, race, and education of the respondents were found to be significantly associated with their answers to several questions. Tables 6, 7, and 8 analyze these factors only for those respondents who **did** complain directly to the business responsible for unsatisfactory auto repairs, who **did** take action in addition to complaining to the business, and who **would** go to a regularly used auto repair facility.

TABLE 5. Action Respondents Would Take If Their Cars Needed Work

Action	Number of Responses	Percentage of Sample Making Response*
Take car to regularly used independent repair shop	80	30%
Take car to regularly used automobile dealership	76	29
Compare prices and services of several businesses	66	25
Ask friends, family, or neighbors for advice	61	23
Take car to regularly used service station	51	19
Other	43	16
Rely on convenient location	14	5
Rely on advertisements	8	3
Total	399	

*Sample size = 265.

There was a significant relationship between both race and sex and the fact that respondents either did or did not complain directly to the personnel responsible for unsatisfactory car repairs.[2] Whites and males were more likely to complain directly to auto repair personnel than were females and nonwhites (see Table 6).

Race and sex were also significant determinants of whether the respondents, in addition to complaining directly to the service personnel responsible for unsatisfactory car repairs, boycotted the business[3] or wrote the business performing the repairs.[4] Race was also significant with respect to whether the respondents complained to friends or relatives.[5] Table 7 analyzes the sex and race of those respondents who took further action after complaining directly to the business.

Just as whites and males were more likely than nonwhites and females to complain directly to the business, so whites and males were also more likely than nonwhites and females to boycott the business or to write to the company. Whites were also more likely than nonwhites to complain to friends and relatives.

Education was positively correlated with the actions of respondents who, in addition to complaining directly to the business responsible for unsatisfactory repairs, also reported to the Better Business Bureau and/or a government agency or newspaper,[6] contacted a lawyer,[7] boycotted the business,[8] or wrote the company.[9] With respect to three of these actions — reporting to the Better Business Bureau, contacting a lawyer, and writing the company — Table 7 shows that respondents who were college graduates or who had received graduate training constituted less than one-third of those who indicated they had taken these actions. The remaining two-thirds had no more than a high school education or had only attended, but not graduated from, college. Thus, of those respondents who stated that they took some form of action in addition to complaining directly to service personnel about unsatisfactory automobile repairs, the less educated respondents were more likely to report to the Better Business Bureau, contact a lawyer, or write the company than were the more educated respondents.

EDUCATION OF RESPONDENTS WHO WOULD USE REPAIR FACILITIES

In addition to being a significant determinant of whether respondents took further action after complaining directly to the business responsible for their dissatisfaction, education was also related to the type of action respondents stated they would take if their cars were to need work. Table 5 indicates the number of respondents who selected each of the eight alternative types of action. When these actions were cross tabulated by education, three of the eight were found to be significantly correlated with education: taking car to regularly used independent repair shop,[10] taking car to regularly used auto dealership,[11] and taking car to regularly used service station.[12]

TABLE 6. Sex and Race of Respondents Who Complained Directly to Repair Business*

Sex		Race	
Female	98(45%)	Nonwhite	47(22%)
Male	118(55%)	White	169(78%)
Total	216(100%)	Total	216(100%)

*Sample size = 265.

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[2] For race $\chi^2=5.31$ with 1 degree of freedom; $\alpha=.02$. For sex $\chi^2=2.53$ with 1 degree of freedom; $\alpha=.11$.

[3] For race and boycotting the business $\chi^2=5.76$ with 1 degree of freedom; $\alpha=.02$. For sex and boycotting the business $\chi^2=4.94$ with 1 degree of freedom; $\alpha=.03$.

[4] For race and writing the company $\chi^2=3.06$ with 1 degree of freedom; $\alpha=.08$. For sex and writing the company $\chi^2=2.02$ with 1 degree of freedom; $\alpha=.16$.

[5] $\chi^2=5.17$ with 1 degree of freedom; $\alpha=.02$.

[6] $\chi^2=10.45$ with 3 degrees of freedom; $\alpha=.02$.

[7] $\chi^2=7.08$ with 3 degrees of freedom; $\alpha=.02$.

[8] $\chi^2=7.07$ with 3 degrees of freedom; $\alpha=.07$.

[9] $\chi^2=6.05$ with 3 degrees of freedom; $\alpha=.11$.

[10] $\chi^2=9.21$ with 3 degrees of freedom; $\alpha=.03$.

[11] $\chi^2=13.96$ with 3 degrees of freedom; $\alpha=.003$.

[12] $\chi^2=13.69$ with 3 degrees of freedom; $\alpha=.003$.

TABLE 7. Sex, Race, and Education of Respondents Who Took Further Action*

Characteristic	Action				
	Report to Better Business Bureau	Contact Lawyer	Boycott Business	Write Company	Complain to Friends
Female			22 (35%)	33 (42%)	
Male			41 (65%)	48 (58%)	
Total			63(100%)	81(100%)	
Nonwhite			8 (13%)	14 (18%)	31 (20%)
White			55 (87%)	67 (82%)	127 (80%)
Total			63(100%)	81(100%)	158(100%)
High school or less	21 (26%)	13 (27%)	12 (19%)	23 (28%)	
Some college	36 (44%)	21 (44%)	17 (27%)	32 (40%)	
College graduate	12 (14%)	9 (19%)	17 (27%)	14 (17%)	
Graduate training	13 (16%)	5 (10%)	17 (27%)	12 (15%)	
Total	82(100%)	48(100%)	63(100%)	81(100%)	

Note: Missing data were not sufficiently significant for purposes of this study.
*Sample size = 265.

Table 8 analyzes the level of formal education of those respondents who stated that if their cars needed work they would take them to a regularly used independent repair shop, auto dealership, or service station. The data suggest that respondents at three of the four levels of education would tend to select one of the three types of repair facilities over the other two types. Of the respondents who indicated that they would go to an independent repair shop, one-third had no more than a high school education. Similarly, two-fifths of those who stated that they would go to an automobile dealership had some college education, and nearly two-fifths of the respondents who stated that they would take their cars to a service station were college graduates with graduate training.

CONCLUSION

The survey and the hearings used in this study provide a description of South Carolina consumers who complain about automobile repairs. The complainants are predominantly white, middle-aged, middle class, and well educated. Both the survey and the hearings provide a description of why consumers complain about automobile repairs. This information will be used by the Department of Consumer Affairs and the Attorney General's Office to propose measures designed to alleviate the problem of automobile repair complaints. Finally, the survey reveals significant relationships between race, sex, and education and certain types of action the respondents did take or would take with respect to automobile repair problems.

A study by the General Accounting Office (GAO) concluded that throughout the United States "auto repair problems are serious, persistent, and increasing." Although Americans spend more for private automobile transportation than for any other consumer product except housing (according to the Congressional Report), they lose about $20 billion each year on automobile repairs. However, neither report recommends major new programs by the federal government. Complaints about auto repairs are simply too numerous and complex. Only a coordinated effort by local, state, and federal governments and by the automobile repair industry itself can resolve these complaints and prevent their reoccurrence.

TABLE 8. Education of Respondents Who Would Go to a Regularly Used Repair Facility

Education	Facility			
	Independent Repair Shop	Auto Dealership	Service Station	Total
High School or less	27 (34%)	11 (14%)	8 (16%)	46 (22%)
Some college	16 (20%)	31 (41%)	12 (24%)	59 (29%)
College graduate	21 (26%)	12 (16%)	11 (21%)	44 (21%)
Graduate training	16 (20%)	22 (29%)	20 (39%)	58 (28%)
Total	80(100%)	76(100%)	51(100%)	207(100%)

*Sample size = 265.

Demographic Characteristics and Automobile Dealer Sales Performance

By Gerald V. Boyles and Charles E. Edwards

Franchised automobile dealers have as their main objective the acquisition of profits. However, they must also be concerned with the market penetration of their make of car. Each manufacturer has a predetermined planning potential for the sales of his make, a market objective presumably to be attained by the dealer. The dealer is concerned with maintaining the adequacy of representation of his make as a requirement of his franchise. Manufacturers are concerned with the sales performances of their franchisees because they wish to maintain effective dealership organizations. Hence, the sales performances of dealers are of importance to both new car dealers and manufacturers.

PURPOSE OF STUDY

One would expect to find variations in sales performance among automobile dealers, for numerous reasons. Choices of product style and quality, national advertising, and other factors obviously impact on consumer demand, leading to differences in sales performances among dealers, especially among different makes of cars. However, these represent variables beyond the control of individual dealers: they are the choices of manufacturers. Among dealers of a given make, there may also be other influences on the sales performance. Variations in dealer sales performance might occur because of differences in managerial effectiveness, the availability of capital resources, their respective advertising and local sales promotion efforts, and their pricing strategies. Even so, dealers may have a relatively limited influence on the sales potentials of their makes in a given market, since the styling and model choices of manufacturers determine the characteristics of the product they have available for sale.

Given the manufacturers' product and advertising choices at the national level, presumably constants applicable in all market areas, one may question whether there are likely to be variations in dealer sales performances attributable to differences among consumers. Differences in consumer characteristics often exist among the local or regional markets confronting the retail sellers of cars, i.e., the local dealers. Given the choice of a manufacturer to locate a franchise, how important are demographic characteristics in establishing planning potentials for the dealer or dealers handling the make in a specific area?

The basic question explored for this study is whether allowance should be made for demographic characteristics, such as income differences or rural-urban differences, of the various markets in establishing the planning potentials for specific dealers. Alternatively, if demographic variables are found to be of no significance in explaining variations in sales of specific makes in different markets, manufacturers might simply expect dealers

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in their particular make to achieve the same average penetration of sales per capita as is accomplished nationally. Therefore, the purpose of this article is to examine the possible impact of demographic variations among markets as explanatory variables in determining the sales of various makes of cars.

DATA AND METHODOLOGY

A key word, of course, is "market." A market in this case presumably is that trading area from which the customers of a particular dealership come for purposes of purchasing the make in question. Unfortunately, the definition of trading areas for purposes such as the present study is not an easy task. The principal methodology for this study is a cross-sectional analysis of sales of various makes by geographic areas. The areas available for the study are the counties of North and South Carolina. Limitations exist since the actual areas of service of particular dealers of a specific make may overlap. There may be customers willing to travel substantial distances, especially where interstate highway or other good road connections are available, to seek out and compare prices of makes in which they are interested. Additionally, the mass media covering extensive areas may lead to substantial overlap in areas serviced by specific dealers. Although it is recognized that the geographic dimensions of counties may not correspond precisely to trading areas, the counties are used in this study as proxies for trading areas.

Since new cars sold must be registered with state motor vehicle departments, registration data are available for specific makes of cars, but efforts to determine the selling dealer for every new car registered is a task well beyond the limit of resources available for this study. In many cases, a particular area such as a large county or the counties of a Standard Metropolitan Statistical Area (SMSA) may be serviced by several dealers in the same make. Nevertheless, the county data do permit examination of relationships between new car registrations of specific makes and characteristics of the consumer populations of the counties.

As a means of exploring the above questions, the years 1972 and 1976 were selected as a basis for a cross-sectional study. A greater emphasis is placed in this article on the year 1972, partly because it seemed to the authors to be a fairly representative year in terms of total sales of new cars and partly because of its closer proximity in time to the **1970 U.S. Census of Population** from which data were extracted for population characteristics by county in the states of North and South Carolina. (Furthermore, considerable similarity existed in the 1972 and 1976 results.)

With the cooperation of the North Carolina and South Carolina Automobile Dealers Associations, automobile registration and franchise data were collected for the 100 counties of North Carolina and the 46 counties of South Carolina. These authors excluded sales to governments to represent more closely the sales to the final consumer markets.

Selected demographic data also were accumulated for each of the 146 counties. The demographic data utilized are from the **1970 U.S. Census of Population.** Data from the 1980 census were not available at the time of this study. Although population characteristics may change over time, the relatively short time lapse between 1970 for the demographic data and the sample year 1972 for the automobile registration and franchise data was not deemed especially troublesome, particularly since the demographic data were utilized primarily in index form, i.e., an index of median family income in the county relative to median family income for the nation, and so forth. While incomes may have risen over time, relative patterns among counties were assumed to have little likelihood of changing much over the two-year span. Over the longer period from 1970 to the second cross section year of 1976, the likelihood of significant demographic changes is a cause of greater concern to the analysis and receives further comment in a later section.

There are a number of demographic variables one might think would contribute to an explanation of variations in car sales. These would include the size of the consuming population, the income level of the population, social characteristics, the age levels of the population, and whether or not the people live in primarily an urban or rural environment.

There are numerous forms in which these variables might be examined. Absolute sales by make examined as a function of total population is one form in which the study could conceivably proceed. Preliminary examination of relationships was made by merely regressing on a cross-sectional basis the absolute sales by makes of cars by county on the following variables: total population, nonwhite percentage of population, urban percentage of population, median age, index of median family income, and the franchise variable (defined below). Trial regressions of this form, however, proved rather erratic in their results: (1) the population variable is so overwhelming in its importance in relation to total sales that it tended to submerge the potential importance of other variables, and (2) the inclusion of population as an independent variable for regressions of the absolute sales form introduced statistical problems since certain of the other variables generally were very closely correlated with population. The greater the total population of a county, the higher generally the percentage of urban population and the level of per capita income. In addition, total population is a key to the franchise representation of the higher-priced and generally smaller-sales-volume makes, so that inclusion of both population and franchise representation as variables produced erratic results. These two variables for some makes were correlated at the .93 level, and often the sign for one or the other's regression coefficient was negative, which is contrary to what one would expect. Hence, the model using absolute sales as the dependent variable and total population of a county as one of the independent variables was examined only as a preliminary step, and then discarded.

Since the present study is concerned with the level of sales effectiveness by make as influenced by selected demographic variables, the cross-sectional analysis is run in terms of sales by make per 1,000 capita of population. This provides a perspective on relative penetration and reduces the overwhelming regression impact of total population as a variable.

Wide variations exist among counties in the new car registrations per 1,000 capita of various makes of cars. One of the most obvious reasons for such variations might be the choice of a manufacturer as to whether his make will be represented in a particular county. One would expect counties in which a make is represented to have a greater sales penetration by that make than those counties with no representation. Inclusion of a variable for franchise representation assists the analysis in helping hold constant the effects of the manufacturers' choices of franchise location.

Obviously, not all variables relevant to the sales of the various makes of cars can be obtained. There are variables, particularly differences in local management, retail prices, and sales promotion efforts, for which data are not available. The impact of such variables may be interpreted as residuals not explained by the regressions of sales per 1,000 capita on the assorted included demographic variables.

The variables utilized in the present study are defined as follows.

1. New car registrations for 1972 and 1976, by 12 domestic makes and by all other makes as a group organized by county and expressed in terms of registrations per 1,000 capita of the counties' estimated 1972 and 1976 populations. Each make's registrations or the final all other group's registrations per 1,000 capita is the dependent variable in each of the regressions.

2. Median family income index by county, expressed as a percentage of United States median family income from the **1970 U.S. Census of Population.**

3. The percentage of families in a county with incomes above $15,000 per year, a second measure of income from the **1970 U.S. Census of Population.**

4. A composite income index consisting of the above median family income index times the percentage of families with incomes above $15,000, divided by 100; hence, an index also based on the **1970 U.S. Census of Population.** (Although the other income measures were used in various models, the composite income index was settled on for principal focus.)

5. Social characteristics of the population, each of which was also included in selected regression analyses: (a) percentage of county population nonwhite, (b) percentage of county population urban, and (c) median age of county population.

6. Franchise representation by make by county for 1972, expressed as a proxy variable (0, +1) in an effort to hold constant the effects of the manufacturers' choices of franchise location as to whether a given make is represented in a county. These data were also used for the 1976 cross section.

EMPIRICAL RESULTS

The basic results of this study may be presented briefly in two selected tables using the 1972 data, with supplementary comments on use of the 1976 data. The regression results are organized in three principal groups representing in sequence those domestic United States makes that "traditionally" have been thought of as (1) "low-priced," (2) "middle-priced," and (3) "high-priced" or luxury cars, with a fourth group representing all other makes combined, principally foreign models.

Examination of the cross-sectional regression results for 1972 shown in Table 1 provides some noteworthy observations. In most cases in Table 1, franchise representation appears highly significant (high t values) for all makes except for Ford and Chrysler. The composite income index also is statistically significant in all cases except Dodge and Mercury (at the 10 percent level of significance for Chrysler and the 1 percent level for the others except Dodge and Mercury). AMC and Plymouth compare more closely than Chevrolet and Ford with the "middle-priced" group in associations of sales per capita with franchise representation and income variations. Buick, Oldsmobile, and Pontiac — all General Motors Corporation makes — show the more significant relationships of new car sales per 1,000 capita to variations in income by county. Interpretation of these results appears consistent with the idea that higher income levels are likely to lead to greater sales of "middle-priced" cars. Perhaps Dodge and Mercury in 1972 were less well defined in consumer perceptions of them as "middle-priced."

Examination of Table 1 also leads one to speculate that franchise representation and income variations are of relatively modest economic significance in explaining total variations in sales per 1,000 capita by county, especially for Chevrolet, Ford, and Chrysler. For example, despite the significant t values for Chevrolet and Ford for the income variable and for Chevrolet for franchise representation, the total variation in sales per 1,000 capita accounted for by these two variables is only about 13 percent for Chevrolet and 5 percent for Ford. Dodge and Mercury also show only a modest

TABLE 1. Regression Coefficients (and t values) for New Car Registrations per 1,000 Capita of Population Related to Composite Income Index and Franchise Representation for North and South Carolina Counties 1972

Category of Car	Constant	Composite Income Index	Franchise Representation	R^2
Low-Priced				
AMC	0.1131	0.0551 (5.9250)*	0.4807 (6.4903)*	.467
Chevrolet	7.2537	0.1842 (3.6150)*	2.0320 (2.3117)**	.135
Ford	9.1808	0.1605 (2.7971)*	-0.4491 (-0.5263)	.052
Plymouth	1.5025	0.0806 (4.7012)*	0.4851 (3.3299)*	.262
Middle-Priced				
Buick	1.0914	0.1366 (7.6206)*	0.7404 (4.8569)*	.475
Dodge	1.3323	0.0252 (1.4027)	0.5625 (3.8312)*	.142
Mercury	0.9265	0.0133 (0.7230)	0.6896 (4.6136)*	.160
Oldsmobile	0.8291	0.1554 (7.2448)*	1.1142 (5.8991)*	.467
Pontiac	1.8306	0.1235 (4.3102)*	1.2283 (4.9058)*	.311
High-Priced				
Cadillac	0.3031	0.0221 (3.8170)*	0.3002 (6.5501)*	.419
Chrysler	0.4924	0.0142 (1.8211)***	0.1056 (1.5906)	.059
Lincoln	0.1118	0.0147 (5.5166)*	0.1078 (4.1098)*	.323
All Other	1.5329	0.3921 (9.6191)*	0.9546 (2.9775)*	.541

*statistically significant at the 1 percent level.
**statistically significant at the 5 percent level.
***statistically significant at the 10 percent level.

overall relationship. However, for most other makes the two variables account for substantially larger proportions of the total variation in sales performances among makes in the county cross sections. For four makes — AMC, Buick, Oldsmobile, and Cadillac — the R^2 approached the 50 percent level. For the "all other" group, representing primarily foreign car franchises, the R^2 was over 50 percent. Obviously, there are other variables of great importance to the variations in sales per 1,000 capita by make by county — probably most importantly variations in local dealer management, promotion, and pricing strategies. However, it does appear from Table 1 that attention should be given to income variations in setting sales goals (planning potentials) for most makes, assuming the proxy variable (0, +1) holds constant the effects of franchise representation.

Although not included in tabular form herein, other regressions were also run. Splitting the complex composite income variable into its two components — median income and percentage of the population of a county with family income over $15,000 — had little effect on the regression coefficients. In this instance the greater statistical significance usually fell on the percentage of families with incomes over $15,000, along with a more modest weight on median income. The inclusion of two measures of income had little effect on other regression coefficients or on the R^2 values.

In an effort to explore the potential impact of other social characteristics, regressions were run that included the percentages of nonwhite and urban population of a county and median age of a county's population as independent variables along with the composite income index and franchise representation variables shown in Table 1. As shown in Table 2, the addition of these three demographic variables had generally modest effects upon the significance of the income and franchise representation variables for the 1972 cross section. The R^2 values in all cases were modestly increased. The sign of the franchise representation coefficient changes from negative to positive for Ford, but is still not significant statistically. Perhaps most interesting in the Table 2 results is the appearance of median age as a significant explanatory variable for Buick and Chrysler (at the 1 percent level for Buick and the 5 percent level for Chrysler). Possibly this is an indication that older (more stable) population groups are likely to make a move upward to higher-priced makes, probably also having the income potential to make such purchases. The opposing signs for Chevrolet and Ford for the nonwhite and median age characteristics are interesting, although not statistically significant for either Chevrolet or Ford with regard to the age variable and significant (at the 5 percent level) only for Chevrolet with regard to the nonwhite population variable.

Of interest in Table 2 are the negative coefficients of the urban population percentages for both Chevrolet and Ford. It is likely that the urban population variable is serving at least partly as a proxy for the competitive impact of other franchised makes. Franchises for the makes other than Chevrolet and Ford are most often located in the more highly populated (urbanized) counties and are often absent from rural counties in which Chevrolet and/or Ford have the only franchises represented. Chevrolet is represented in 138 and Ford in 135 of the 146 counties. The next most widely represented makes are found in about 95-105 of the counties. Thus the density of Chevrolet's and Ford's new car sales relative to population is inversely related to the representation of other competing makes (as proxied by the urban percentage variable). The negative coefficients for this variable for other makes, as shown in Table 2, are not statistically significant; but their negative signs may be indicative of some imperfection of the variable as a proxy for the existence of competition from other makes' franchises located in the same county.

The relative significance of the composite income index and the franchise representation variables in Table 2 follow essentially the same pattern as found in Table 1. These two variables are significant for most makes in Table 2, exceptions again being Ford with regard to franchise representation and Dodge and Mercury with regard to the composite income index.

To examine the stability of the cross-sectional coefficients over time, the same regression models reported in Tables 1 and 2 for the year 1972 were also run using 1976 data on new car sales per 1,000 capita. The 1970 demographic characteristics were continued in use as the independent variables in the regressions. In general, both the magnitudes of the regression coefficients and their levels of signicance (t values) were very similar in 1976 to those in 1972. In some cases there were changes in the signs of the coefficients, but in each of these cases the changes were not statistically significant. In a few cases the level of statistical significance changed. Finally, as might be expected, the overall explanatory power of the independent variables (as measured by R^2) was somewhat reduced for most of the makes in 1976 as compared with the corresponding values in 1972. The year 1976 being more remote in time than the year 1972 relative to the 1970 census year for the demographic variables, the greater is the probable error in using the 1970 base year data to describe the dynamic economy and population of North Carolina and South Carolina. Some counties obviously may have changed in characteristics over time, but more up-to-date data on these characteristics were not available at the time of this study. Still, the relative consistency in the results for the two different years tends to strengthen their acceptability. (Interested readers may obtain copies of the 1976 tables as long as the supply lasts by writing the authors.)

The implications of the present analysis for evaluating the unit sales performance of a dealer may be illustrated in a hypothetical situation. Consider, for example, a Buick dealer whose trading area corresponded in 1972 to the geographic limits of a hypothetical county with 70,000 total population of the following characteristics: 55 percent nonwhite, 19 percent urban, 23.6 median age, 7.9 percent of families with income over $15,000, and a median family income index of 62. For dealers whose trading areas do not conform to the geographic limits of a county, complex allocation or aggregation procedures would be necessary to estimate sales objectives. Trading areas of dealers in reality often overlap. However, for our hypothetical situation, use of the regression equations gives a target of about 175 units with the first equation, or 165 with the second. By comparison, use of an overall average of Buick sales to the public (excluding governments) in South Carolina per 1,000 capita in 1972 would establish a target of about 190 units. Comparison of the dealer's actual sales in 1972 with the estimated sales objectives would determine whether the attained sales are above or below the expected level for the period,

TABLE 2. Regression Coefficients (and t values) for New Car Registrations per 1,000 Capita of Population Related to Nonwhite Population, Urban Population, Median Age, Composite Income Index, and Franchise Representation for North and South Carolina Counties 1972

Category of Car	Constant	Nonwhite Population	Urban Population	Median Age	Composite Income Index	Franchise Representation	R^2
Low-Priced							
AMC	-0.2275	-0.0023	-0.0020	0.0155	0.0612	0.4963	.494
		(-0.8822)	(-0.7793)	(1.0108)	(4.6097)*	(6.2159)*	
Chevrolet	2.3450	0.0373	-0.0396	0.1066	0.3882	2.8472	.220
		(2.5598)**	(-2.8324)*	(1.2121)	(5.1460)*	(3.2431)*	
Ford	9.6115	-0.0083	-0.0461	-0.0201	0.3332	0.1286	.117
		(-0.5003)	(-2.9225)*	(-0.1999)	(3.8925)*	(0.1481)	
Plymouth	0.1019	0.0088	-0.0035	0.0386	0.1035	0.5733	.282
		(1.7929)***	(-0.7274)	(1.3259)	(4.1336)*	(3.6995)*	
Middle-Priced							
Buick	-2.1462	0.0104	0.0087	0.1050	0.1203	0.7029	.522
		(2.1441)**	(1.7236)***	(3.6242)*	(4.7848)*	(4.2252)*	
Dodge	0.7356	-0.0136	0.0011	0.0403	0.0102	0.5122	.278
		(-2.8713)*	(0.2402)	(1.4286)	(0.4192)	(3.5348)*	
Mercury	0.8860	-0.0034	-0.0039	0.0055	0.0236	0.7447	.172
		(-0.6566)	(-0.7115)	(0.1729)	(0.8629)	(4.5085)*	
Oldsmobile	1.4860	-0.0042	-0.0002	-0.0182	0.1510	1.0974	.469
		(-0.6704)	(-0.0292)	(-0.4870)	(4.6443)*	(5.2553)*	
Pontiac	-0.0578	0.0142	0.0013	0.0495	0.1348	1.2844	.325
		(1.7215)***	(0.1592)	(1.0054)	(3.1709)*	(4.5824)*	
High-Priced							
Cadillac	0.0491	0.0021	-0.0007	0.0065	0.0270	0.3151	.427
		(1.3456)	(-0.4661)	(0.6992)	(3.3410)*	(6.3458)*	
Chrysler	-0.6619	0.0084	-0.0008	0.0305	0.0267	0.1587	.153
		(3.9143)*	(-0.3924)	(2.3872)**	(2.4302)**	(2.3349)**	
Lincoln	0.0944	-0.0001	-0.0005	0.0007	0.0164	0.1136	.325
		(-0.0112)	(-0.5399)	(0.1261)	(3.5698)*	(4.0033)*	
All Other	8.7296	-0.0591	0.0087	-0.1852	0.2935	0.7072	.640
		(-6.1173)*	(0.8687)	(-3.1928)*	(5.8600)*	(2.2181)**	

*statistically significant at the 1 percent level

**statistically significant at the 5 percent level.

***statistically significant at the 10 percent level.

thus enabling evaluation of the dealer's sales performance. The regression based estimates recognize demographic characteristics other than total trading area population; the latter procedure does not.

CONCLUSIONS

The present study has examined variations in new car sales per 1,000 capita among the 146 counties of North and South Carolina combined for cross-sectional analysis. Although it is recognized that county data may be imperfect proxies for the data of actual trading areas confronting dealers of specific makes, their use provides some insights by supporting prior expectations of these authors regarding factors thought to be influencing sales of new cars.

Except perhaps for the ubiquitous Chevrolet and Ford cars, it appears that attention should be given to demographic variables of the trading areas in which dealers are to participate in setting their sales objectives. The modest proportions of total variation in sales per 1,000 capita for Chevrolet and Ford explained by the included independent variables of this study are perhaps reflections of the breadth of product coverage by the two makes. Both Chevrolet and Ford have a wide array of models covering both the low- and middle-priced market segments. Otherwise, the income variable generally appears most significant for the majority of makes. For some makes, however, other variables also appear to be important, at least for the average relationships represented by the regressions over the combined North and South Carolina counties. If these regionally determined results can be extended to the nation, one may be tempted to expect Chevrolet and Ford franchisees to sell the national average number of new cars per 1,000 capita for their market areas. However, even in their case this should be qualified to allow for income variations among trading areas. For other makes, the demographic variables generally appear worthy of greater economic attention in setting sales objectives.

Identifying Potentially Profitable Commuter Airline Routes in South Carolina: A Report

By Clinton H. Whitehurst, Jr. and Mark A. McKnew

INTRODUCTION

In August 1980, an agreement was reached between the South Carolina State Development Board and the Department of Industrial Management of Clemson University for the latter to undertake a detailed investigation of commuter airline service in South Carolina. In particular, the study was to identify potentially profitable commuter routes, i.e., city pairs that could support a commuter service.

At the time this study was begun, South Carolina was served by five trunk or regional carriers: Delta, Eastern, Piedmont, National, and Republic. There were also three commuter airlines in service: Atlantis, Bankair, and Sunbird.

Dr. Clinton H. Whitehurst, Jr. is Professor of Management in the College of Commerce and Industry at Clemson University. He earned his Ph.D. Degree in Economics at the University of Virginia and did post doctoral work in defense and strategic studies at Edinburgh University. Dr. Whitehurst is the author of 60 articles and 3 books, and serves as a consultant to the U.S. General Accounting Office and as an Adjunct Scholar at the American Enterprise Institute in Washington, D.C.

Dr. Mark A. McKnew is Assistant Professor of Management in the College of Commerce and Industry at Clemson University. He holds a Ph.D. Degree in Operations Research Applied to Public Systems from Massachusetts Institute of Technology. Dr. McKnew's research interests include operations research applied to public systems and survey research techniques.

Since passage of the Airline Deregulation Act of 1978, with its provisions for subsidizing "essential air service" to smaller communities and allowing regional and trunk carriers to abandon unprofitable routes, mainly those serving smaller cities, commuter airlines have become a rapid growth industry.[1] Under this act, South Carolina lost a lot of the trunk service previously enjoyed.

In such an environment, it is recognized that high risk, questionably profitable commuter services might be inaugurated only to be abandoned later. A chief rationale for the Clemson study was to minimize chances of such an occurrence on the assumption that it was better from a statewide (image) point of view to forego encouraging a questionably profitable service, rather than have it go into operation for only a short time.

METHODOLOGY

An initial list of candidate communities for commuter airline service in South Carolina and the adjacent states of North Carolina and Georgia was provided by the State Development Board. The basic criterion was population, i.e., the community must be large enough to have a reasonable chance of supporting a commuter service. These communities were as follows:

South Carolina
- Aiken
- Anderson
- Charleston*
- Columbia*
- Florence*
- Gaffney
- Greenville*
- Greenwood
- Hilton Head Island
- Myrtle Beach*
- Orangeburg
- Rock Hill
- Spartanburg*
- Sumter

North Carolina
- Charlotte*
- Raleigh-Durham*

Georgia
- Atlanta* (added by Clemson research team)
- Savannah*

*Served by regional or trunk carriers in 1981.

(Note that candidate communities included cities already served by scheduled air carriers since they will be paired with communities having inadequate or no airline service.)

These 18 communities were screened initially in terms of (1) driving distance (and conditions) to nearest airport with air carrier service, (2) driving distance (and conditions) with respect to scheduled commuter service, (3) extent and quality of present air carrier and/or commuter service, (4) airport facilities of the candidate community, (5) economic activity and growth potential of area served by airport, and (6) community interest with respect to financially supporting its airport. Then, surveys were conducted in each community that more precisely identified the extent and type of demand for airline service. A random sample of 100 business firms in each community was surveyed to determine the extent of air travel by each business, the airports of origin and destination, and new routes and/or services desired.

Further, two general surveys, not targeted to a specific community, were conducted. The first queried current commuter airline passengers with respect to their preferences regarding present and future commuter services. The second was administered to 50 travel agencies located in South Carolina. Data obtained estimated annual commuter bookings, points of origin/destination, and reasons for traveling.

Finally, a log linear regression model that considered population; number of businesses; traffic, i.e., how busy were the candidate airports; flying time between airports and driving time between communities; and flight frequency, i.e., number of certificated passenger flights from the candidate airport, was developed to forecast traffic between city pairs. Model forecasts were then checked against empirical data developed through surveys and the demographic profile of the candidate communities. Potentially profitable routes were identified on this basis.

Perhaps the most important step in the initial screening process was estimating the driving time from a candidate community to an airport with scheduled air service, and comparing flying time between airports and driving time between communities. This is shown in Table 1.

In contrasting the flying vs. driving option between Aiken and Columbia, for example, Table 1 shows a flying time of 42 minutes (read across) and a driving time of 60 minutes (read down). This table is useful in two ways. First, the driving time from a candidate community to an airport offering

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[1] There were over 200 commuter airlines operating approximately 1,200 aircraft in 1980. They served 800 airports and provided about 25 percent of all United States scheduled airline service.

TABLE 1. Driving Time vs. Flying Time Between Candidate Commuters (Flying Time: 175 KTS per Hour + 30 MIN Ground Time)

	Aiken	Anderson	Charleston	Charlotte	Columbia	Florence	Gaffney	Greenville	Greenwood	Hilton Head	Myrtle Beach	Orangeburg	Raleigh	Rock Hill	Savannah	Spartanburg	Sumter
Aiken	—	55	62	65	42	66	—	58	45	64	77	45	95	60	62	56	54
Anderson	105	—	86	63	59	81	—	40	41	88	97	68	100	60	85	45	71
Charleston	137	240	—	80	58	57	—	86	76	48	55	48	92	76	56	83	53
Charlotte	164	137	218	—	56	60	—	55	59	92	77	66	68	35	94	49	57
Columbia	60	128	120	103	—	54	—	58	49	66	68	41	90	56	67	54	43
Florence	150	216	120	120	90	—	—	77	78	74	48	55	64	58	80	71	42
Gaffney	130	90	228	55	105	158	—	—	—	—	—	—	—	—	—	—	—
Greenville	120	33	230	100	110	197	55	—	43	92	94	68	92	52	90	37	68
Greenwood	60	50	190	132	81	170	81	58	—	79	89	57	95	54	77	44	61
Hilton Head	144	272	97	262	159	188	264	262	205	—	73	56	111	88	39	90	67
Myrtle Beach	210	280	103	190	155	75	235	261	235	200	—	63	73	75	81	88	55
Orangeburg	60	155	82	147	50	100	150	155	110	115	154	—	89	62	58	65	44
Raleigh	285	295	273	155	223	164	210	252	285	350	186	255	—	115	126	88	75
Rock Hill	135	130	197	30	80	110	48	105	105	238	185	123	184	—	90	45	54
Savannah	137	240	120	260	170	200	260	260	197	43	220	123	360	240	—	90	71
Spartanburg	120	66	220	77	100	170	22	35	70	260	240	147	235	70	255	—	63
Sumter	110	175	103	115	48	41	145	155	130	155	110	65	200	100	168	145	—

Driving Time: 55 MPH
along most practical routes

air carrier and/or commuter service can be approximated. It is assumed here that an airline passenger who is within 75 minutes driving time of an airport with scheduled service will utilize that airport **if** the extent and quality of the service is satisfactory.

Admittedly, 75 minutes driving time is a value judgment and is probably on the low side. The Bureau of Operating Rights of the Civil Aeronautics Board (CAB) defines a community's isolation (from air service) as follows

> No community is isolated if it is less than 90 minutes driving time from an air-service center, while all communities 136 or more minutes driving time away are isolated.
>
> Communities requiring between 90 and 136 minutes driving time are isolated or not isolated depending on the number of flights available at the adjacent air-service center. Essentially, the larger the airport in terms of available flights, the greater the permissible driving time before a community is considered isolated.[2]

The second use of Table 1 is to contrast driving vs. flying time between pairs of candidate communities. It is assumed here that before an individual will fly (1) the driving time between origin and final destination must be at least 150 minutes and (2) the difference between flying and driving (the time saved) must be at least 90 minutes.

After initial screening and questionnaire evaluation, 11 cities were considered potentially able to support a commuter airline service. This, however, was only a first step. The next step was to make a first cut at identifying qualifying profitable routes **between** these cities. This was done primarily on the basis of the business surveys taken in the candidate communities. Table 2 shows our initial city pairings. It also indicates city pairs already receiving scheduled air service.

Analysis to this point has identified several potentially profitable commuter airline routes; however, no estimate has been made of **demand** for service — a factor of considerable importance to an entrepreneur contemplating establishing a new route.

The last leg in our triad methodology was to develop an econometric model that would estimate passenger traffic between city pairs. Initially, six factors were considered as being important determinants of this demand. They were population; number of businesses; traffic, i.e., the number of certified passenger flights from the candidate airport; flying time between airports and driving time between communities; flight frequency; and ticket price. Model parameters were determined using 1980-'81 origin-destination data gathered from active commuter routes in eight states.

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[2] Comptroller General of the United States, **Why the Federal Airline Subsidy Program Needs Revision** (Washington, D.C.: U.S. General Accounting Office, 1977), p. 12.

In the development of the model, the price was dropped as an independent variable. First, fewer than 1 percent of the passenger and business survey responses listed ticket price as a consideration in the decision to fly on a commuter airline. Second, the incidence of interline fare agreements between commuter and certificated carriers suggested that the passenger is often unaware of the actual cost incurred for a stage flown on a commuter carrier.

The remaining five factors were utilized in a number of ways. Both the sum and product of 1980 populations were considered for each city pair. If a city was part of a Standard Metropolitan Statistical Area (SMSA), the population of all counties in that SMSA was used; otherwise, only the population of the county that actually included the city was used.

Since the passenger surveys indicated that business travel accounted for a vast majority of the commuter passengers, the total number of businesses, as well as the number of businesses with 50 or more employees, were considered. This information was obtained from the 1979 **County Business Patterns** tabulated by the Bureau of the Census.

TABLE 2. Recommended Routes Based on Business Surveys

	Charleston	Columbia	Florence	Greenville	Greenwood	Hilton Head	Myrtle Beach	Charlotte	Raleigh-Durham	Savannah	Atlanta
Charleston	—	R		R		R	R	S	R		S
Columbia	R	—		R		R	R	S	R		S
Florence			—				S	S			S
Greenville	R	R		—				S	S		S
Greenwood					—						
Hilton Head	R	R				—	R	R			R
Myrtle Beach	R	R	S			R	—	S			S
Charlotte	S	S	S	S		R	S				
Raleigh-Durham	R	R		S							
Savannah											
Atlanta	S	S	S	S		R	S				

S=Presently served.
R=Recommended routes.

The number of certificated departures was used as a measure of the attractiveness of a particular airport as a destination. This is rationalized on the basis that an airport, as well as a city, can be a destination when one considers connecting flights. One problem, however, is the situation in which a route serves two cities with airports that have a roughly equivalent number of certificated departures (such as Columbia and Greenville-Spartanburg, South Carolina). All else being equal, one would expect a larger passenger demand between an airport with no certificated departures and an airport with 5,000 annual departures than between 2 airports, each with 2,500 annual certificated departures. Therefore, another measure of airport attractiveness must be the difference in the number of certificated departures.

Travel time between city pairs was considered in two forms: (1) the time it would take an individual to **drive** between the cities; and (2) the time it would take to **fly** between the cities, allowing for a total ground transit time of 15 minutes.

The last factor considered was flight frequency. The presumption was that the more frequent the flights between two cities, the more passengers that route was likely to generate. Frequency might also be thought of as a convenience measure in that a higher frequency means flexibility in departure time as well as an increased ability to make reasonable connections at the destination airport.

Using the five basic factors, both linear and log-linear models were tested on quarterly origin-destination passenger counts reported on CAB Form 298 T-1. The model was calibrated using routes served solely by commuter carriers. After all possible models were examined, the following multiplication model was chosen:

$$\mathrm{PASS} = .00112 \left[\frac{\mathrm{P1+P2}}{10000}\right]^{.352} \left[\frac{\mathrm{D1+D2}}{1000}\right]^{.319} \left[\frac{\mathrm{D1-D2}}{1000}\right]^{.109} (\mathrm{FLY})^{1.471} (\mathrm{FREQ})^{1.470}$$

Where,

PASS =Total number of passengers flying between cities per quarter,

P1 =Population of first city,

P2 = Population of second city,

D1 = Annual certificated departures at first city,

D2 = Annual certificated departures at second city,

FLY = Flying time between cities including 15 minutes ground time,

FREQ = Total number of legs flown between cities per week (1 round trip per day = 14 flights per week).

The above model was fit as a log-linear model using the SAS Statistical Package. The resulting R^2=.928. Before using the model to forecast quarterly commuter air passenger demand between cities, however, three things should be noted. First, given that data to calibrate the model were taken from active **commuter** routes, one should look carefully at the forecast of a route involving a large hub or a route involving a medium hub that is greater than 60 minutes flying time from the second city in the pair. For example, it is probably inappropriate to use a city the size of Atlanta in this model. Second, the sample data indicate that the model works best for a route with as many as four round trips per day, and it may tend to err on the high side when dealing with a service frequency of six to eight daily round trips.

The third point is best explained using an example. Suppose one wishes to forecast demand between Greenwood and Raleigh-Durham. Model computation would project a significant number of passengers between the pair, generated primarily by the parts of the model concerned with certificated departures. In 1979, the Raleigh-Durham airport experienced 19,813 scheduled departures. Blindly applying these results without recognizing that one must fly over Charlotte to get to Raleigh-Durham would result in a significant overestimation of demand between Greenwood and Raleigh-Durham. Most Greenwood residents flying north to make a connection would stop in Charlotte rather than fly on to Raleigh-Durham for a connecting flight. Therefore, care should be exercised in applying this model to routes where one hub is flown over in order to get to another hub.

CONCLUSIONS AND RECOMMENDATIONS

When survey results, economic analysis, and estimates of demand made by our computer model were combined, five routes not presently served were identified as being potentially profitable. These were

1. Greenville Municipal — Columbia — Charleston
2. Columbia — Raleigh-Durham
3. Charleston — Myrtle Beach — Raleigh-Durham
4. Charlotte — Hilton Head
5. Atlanta — Hilton Head

Routes not recommended for service at this time but ones that should be evaluated within five years are

1. Hilton Head — Charleston — Myrtle Beach
2. Savannah — Columbia
3. Myrtle Beach — Greenville Municipal
4. Greenville Municipal — Savannah
5. Greenwood — Charleston

Considered for use on our recommended routes were eight different types of aircraft suitable for use in commuter operations. The basic criterion was direct operating cost per available seat mile ($). Either of two aircraft were found acceptable — the eight-passenger Cessna 402 and the eight-passenger Piper Chieftain.

The State Development Board, in assessing the importance of tying South Carolina communities to the national and international airline route system, should evaluate the costs and benefits of the state and local governments **indirectly** subsidizing commuter services, at least for an initial start-up period. A number of indirect aids are now provided by state and local governments in their quest for new industry. There seems no reason not to extend this principle to a commuter airline contemplating inaugurating a new service. This recommendation is not inconsistent with our assumption that state and federal funds would not be available to subsidize commuter operations directly. Further, our recommended routes are not dependent on any type of indirect aid. The point is that our recommendations as to potentially profitable routes can only be in the nature of **forecasts** and, as such, any policy that improves the odds that the forecast will prove correct is probably worth implementing.

A final point is that our recommendations with respect to profitable commuter routes is made in the context of the economic environment as it existed in 1980-'81. As communities grow in size, and should air service to the state by trunk carriers decline further, it would be well worth it for a community to reevaluate its potential to support commuter service in terms of the profitability criteria outlined in this study.

The Management Bookshelf

By Dwight Gardner, Business Librarian, M.B.A., M.S.L.S.

The Management Bookshelf is a service to our readers provided by the Elliott White Springs Library of the College of Business Administration of The University of South Carolina.

CORPORATE TURNAROUNDS: HOW MANAGERS TURN LOSERS INTO WINNERS

by Donald Bibeault
McGraw-Hill Book Co.
1221 Ave. of the Americas
New York, NY 10020
1981, 406 pp., $24.95

This study of corporate financial recoveries draws on the experiences of nearly 100 executives who were responsible for the rescue of 200 failing companies. The author uses actual quotes from the managers involved. He also explains the methods utilized in dealing with various types of crisis situations, and discusses the techniques of segmentation and divestment which are designed to reduce the cost of marginal products, divisions, and staff.

LIFE FOR SALE

by Sharon and Kathleen McAuliffe
Coward, McCann & Geoghegan
200 Madison Ave.
New York, NY 10016
1981, 243 pp., $12.95

This book examines the biotechnology industry with the potential investor in mind. It describes the work being done by both the small, young research companies and the large, established drug and oil companies. The importance of the new products from these bioengineering laboratories is also explored.

MANUFACTURING: RECONSIDERING OLD SOLUTIONS

Introduced by Robert Hayes
Harvard Business Review Library
Soldiers Field
Boston, MA 02163
1981, 212 pp., $21.95

This title is part of the 113-volume series of **Harvard Business Review** reprints comprising the Harvard Business Review Library's **The Manager's Encyclopedia.** The theme of this particular volume (of 18 articles) is the need for American manufacturing managers to reconsider the strategies and tactics used in meeting the problems of the new industrial competition.

HOW TO COMPUTERIZE YOUR SMALL BUSINESS

by Jules Cohen and Catherine McKinney
Spectrum Books
Prentice-Hall, Inc.
Englewood Cliffs, NJ 07632
1981, 190 pp., $7.95 paper

Computer consultants Cohen and McKinney tell how to select the right computer to meet the needs of your business. They describe the various kinds of computer equipment available and report the advantages and disadvantages of each. They also show how to analyze a company's computer requirements in various types of industries.

THE TRUTH ABOUT CORPORATE ACCOUNTING

by Abraham Briloff
Harper & Row Publishers, Inc.
10 E. 53rd St.
New York, NY 10022
1981, 285 pp., $17.95

This book is a critical and controversial look at the field of corporate accounting. The author expresses his disappointment with the profession's ethics and makes various recommendations for improvements in regulation and organization. He also discusses such topics as inflation accounting and the Financial Accounting Standards Board and its pronouncements.

USING PROGRAMMABLE CALCULATORS FOR BUSINESS: PROGRAMS TO REDUCE EXPENSES AND INCREASE PROFITS

by C. Louis Hohenstein
John Wiley & Sons, Inc.
605 Third Ave.
New York, NY 10016
1981, 150 pp., $10.95 paper

This nontechnical guide tells how to get maximum problem solving capacity from your programmable calculator. It covers in detail the various operations, memory facilities, and preprogramming functions, and includes step-by-step examples, samples of output, and ready to run programs.

* * *

Readers are invited to submit titles of books that they wish to call to the attention of others.

STATISTICAL INDICATORS OF SOUTH CAROLINA BUSINESS

ITEMS	December 1981	December 1980	Latest Month Percentage Change From Year Ago
Total Bank Deposits ($ millions)[f]	$ 6,372.7	$ 5,830.5	+ 9.3
Demand	2,972.8	2,865.2	+ 3.8
Time	3,399.9	2,965.3	+ 14.7
Total Bank Loans ($ millions)	NA	NA	—
Savings in Savings and Loan Associations ($ millions)[b]	5,772.8	5,528.7	+ 4.4
Sales and Use Tax Collections ($ thousands)	49,767.9	43,904.7	+ 13.3
Labor Market:			
Civilian Labor Force (thousands)	1,331.4	1,305.7	+ 2.0
Employment	1,200.0	1,208.9	- 0.7
Rate of Unemployment (percentage)[c]	9.9	7.4	+ 33.8
Nonfarm Wage and Salary Employment (in thousands)[c]	1,189.7	1,195.5	a
Manufacturing[c]	383.0	389.8	- 1.7
Contract Construction[c]	66.4	71.9	- 7.6
Transportation and Public Utilities[c]	55.5	54.2	+ 2.4
Wholesale and Retail Trade[c]	232.4	229.9	+ 1.1
Finance, Insurance, and Real Estate[c]	49.3	47.7	+ 3.4
Services, Mining, and Miscellaneous[c]	164.1	159.0	+ 3.2
Government[c]	239.0	243.0	- 1.6
Average Hourly Earnings, All Manufacturing (in dollars)	$ 6.42	$ 5.85	+ 9.7
Initial Unemployment Claims Filed in South Carolina	79,578	35,267	+125.6
Placements by South Carolina Employment Offices (nonagricultural)	3,084	4,094	- 24.7
Indexes of Prices Received by Farmers (1977=100)[c]			
All Farm Products	118	131	- 9.9
All Crops	145	160	- 9.4
Livestock and Products	84	94	- 10.6
S.C. Parity Ratio	79	91	- 13.2
New Motor Vehicle Registrations			
Cars	5,790	7,287	- 20.5
Trucks	1,628	1,858	- 12.4

			First 12 Months		
			1981	1980	Percentage Change
Valuation of Building Permits Issued ($ millions)[d]					
Total for all S.C. Counties	$181.5	$171.9	$1,721.7	$1,807.7	- 4.8
Available County Data					
Aiken	6.4	1.3	38.6	26.0	+48.5
Berkeley	16.1	1.8	45.4	57.8	-21.5
Charleston	19.2	14.0	240.0	189.8	+26.4
Dorchester	1.8	2.0	31.6	31.6	0
Lexington	3.9	4.0	55.2	94.4	-41.5
Richland	7.2	12.9	145.5	128.7	+13.1
Greenville	18.9	60.4	169.8	257.5	-34.1
Pickens	2.8	2.3	32.8	62.1	-47.2
Spartanburg	5.7	7.2	117.7	89.0	+32.2

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[a] Less than one-half of 1 percent.

[b] Due to the termination of certain data series by the Federal Reserve Bank of Richmond, this series has been replaced by the Federal Home Loan Bank of Atlanta.

[c] Ibid., the South Carolina Employment Security Commission.

[d] Note: These amounts are now being reported in millions of dollars instead of thousands of dollars.

[e] NA: Not available.

[f] Institutions with total deposits of $15 million or more as of 12/31/'79 and including ATS accounts, telephone and preauthorized transfer accounts, and NOW accounts/share drafts.

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South Carolina's Economic Future

EXCESSIVE SPENDING
CREDITS
Debits
TAXES
$
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JOSEY
1983-84
STATE
BUDGET

Volume XXVIII, Number 6
May 1982

"Announcing: The Center for Industry Policy and Strategy"
by Virginia Ann Van Seters

"South Carolina at the Crossroads"
by The Honorable Rembert C. Dennis

"The South Carolina Economy in the 1980's"
by James A. Morris

"Budgeting and Expenditures in South Carolina"
by Edgar A. Vaughn, Jr., J. Samuel Griswold, Phillip L. Latham, and Alton T. Loftis

"South Carolina General Fund Revenues: A Brief Discussion"
by Eugene A. Laurent and Harry W. Miley, Jr.

"Financing Urban Needs in South Carolina During the 1980's"
by Sidney F. Thomas, Jr.

"The Management Bookshelf"
by Dwight Gardner

Statistical Indicators of South Carolina Business

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Summary of Contents

3 Announcing: The Center for Industry Policy and Strategy. Virginia Ann Van Seters of The University of South Carolina's College of Business Administration describes USC BA's newest research center.

4 In **South Carolina at the Crossroads,** the Honorable Rembert C. Dennis, South Carolina Senator and Chairman of the Senate Finance Committee, reviews this state's growth experience and looks at its future.

12 The South Carolina Economy in the 1980's. Dr. James A. Morris, Chairman of the S.C. Board of Economic Advisors, considers here the possibilities of economic expansion during the remainder of the 1980's. He suggests that because of its relative advantage as a location for production, the Palmetto State should benefit more than the nation as a whole from increases in investment spending.

18 The problems of **Budgeting and Expenditures in South Carolina** are examined in this article by State Auditor Edgar A. Vaughn, Jr. and Drs. J. Samuel Griswold, Phillip L. Latham, and Alton T. Loftis of the State Auditor's Office. They maintain that the state has no authority to budget a deficit, which means that the trend for expenditures follows the trend of revenue collections or growth in personal income, whichever is lower. It remains to be seen, they say, what impact the current recession will have on revenues for fiscal year 1982-'83.

22 In **South Carolina General Fund Revenues: A Brief Discussion,** Dr. Eugene A. Laurent and Harry W. Miley, Jr. of the Division of Research and Statistical Services, observe that it may be some time before the state experiences the average revenue growth of the recent past. They also say that with prospects in the 1980's for slower gains in the United States economy, smaller increases in inflation, and less rapid population growth, no surge in personal income is expected for South Carolina.

26 Financing Urban Needs in South Carolina During the 1980's. Sidney F. Thomas, Jr., Executive Director of the Central Midlands Regional Planning Council, states in this article that financing urban needs in South Carolina during the 1980's will require communication, coordination, and cooperation between state and local government and between individual units of local government. Petty jealousies, provincialism, and parochialism must give way to cooperation, he feels, if we are to meet our future needs.

31 The Management Bookshelf, a regular feature in which Dwight Gardner, USC BA's Business Librarian, reviews books of interest to business practitioners.

32 Statistical Indicators of South Carolina Business. A regular feature, listing the latest available data.

business and economic review Vol. XXVIII, No. 6 May 1982

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Opinions expressed in this publication are those of the authors, and not necessarily those of the Division of Research or the University.

Articles submitted for consideration for publication should concern business and economics topics of interest to managers in the private or public sectors. All manuscripts should be 12-26 double-spaced, typewritten pages, in English. Graphs, mathematical and quantitative data, charts, and tables are acceptable. Authors should submit 2 copies of each manuscript plus a vita sheet and a photograph. Upon publication, 6 complimentary copies of the journal are sent to the authors, with additional copies available upon request. Manuscripts to be considered for publication should be sent to: James M. Black, Editor, **Business and Economic Review,** College of Business Administration, The University of South Carolina, Columbia, S.C. 29208.

Published in Oct., Nov., Dec., March, April, and May by The University of South Carolina as a service for those interested in business and economic matters.

This month's cover: In 1939, the operation of state government in South Carolina cost a total of $7.8 million. The 1982-'83 budget for the Palmetto State will reach nearly $4.0 billion. South Carolina is faced with the choice of either moving forward with additional money for services or continuing at the bottom of the list of states, a position that has not been desirable over all these years. (Cartoon by Eddie Josey of USC's Instructional Services Center.)

Announcing: The Center for Industry Policy and Strategy

By Virginia Ann Van Seters

Dr. James F. Kane, Dean of The University of South Carolina's College of Business Administration, takes pride in announcing the establishment of the Center for Industry Policy and Strategy in BA's Division of Research. Details are presented below.

The Center for Industry Policy and Strategy (CIPS) began operations formally spring semester. Dr. Jeffrey S. Arpan, Professor of International Business at USC, is CIPS' Director.

According to Dr. Arpan,

> the main objectives of CIPS will be to (a) identify critical changes in the global and domestic environments of specific industries, (b) identify who is doing what to whom by following what strategies, (c) identify the current and expected future state of the technology related to the industry, (d) identify policies and strategies likely to be successful in the future (in terms of improving international competitiveness), and (e) based on the above, identify the strategic choices for American companies and government to consider adopting if American competitiveness is to be enhanced. CIPS will seek to accomplish its objectives by conducting comprehensive research on trends in the international competitiveness of American industries and by disseminating this knowledge via research reports, congressional testimonies, and special conferences.

Miss Virginia Ann Van Seters is Associate Editor for the Division of Research and Editor of the Faculty-Staff Newsletter in the College of Business Administration, The University of South Carolina. An honor graduate of USC's College of Journalism, Miss Van Seters has won numerous professional awards. Prior to joining the staff of the College of Business Administration, she also worked in legislative reporting and public relations.

CIPS will select one or two industries each year for study. Each industry study will have a project team of three to four faculty from USC (representing different but appropriate disciplines), a research scholar from a foreign country whose industry is a world leader (e.g., a Japanese scholar for a study of the automotive industry), and two persons from major United States companies in the industry who have experience in long-range planning. This research team will also receive input from an industry advisory team.

The first industry being studied is textiles. Dr. Brian Toyne, Associate Professor of International Business, has been named Project Director. Other members of the project team from USC are Dr. Andy H. Barnett, Assistant Professor of Economics; J. Carl Clamp, former President of United States Filter Corporation and Distinguished Lecturer in Management; Dr. David A. Ricks, Professor of International Business; Dr. Terence A. Shimp, Associate Professor of Marketing; and Joseph Andrews, Ph.D. student in Economics. Team members from outside USC are Dr. Edward Vaughn, Director of the School of Textiles, Clemson University; Dr. Clarence Rodgers, Assistant Professor of Textiles, Clemson University; Tran Van Tho, International Business Information, Tokyo, Japan; Dr. Geoffrey Shepard, Employment Research Center, University of Sussex, England; and Steven Woolcock, Research Fellow, Royal Institute of International Affairs, London.

"As far as we have been able to determine," says Dr. Arpan, "no group in the United States is doing the type of comprehensive, industry specific study of American competitiveness envisioned by CIPS. Yet the federal government (particularly the Department of Commerce) and the National Science Foundation have recently begun to examine American international competitiveness on an industry specific basis, and seem to have realized the appropriateness of this approach based on the success such foreign countries as Japan, Germany, France, South Korea, and Brazil have had. In addition, the proposed design of the research team will facilitate faculty enrichment (as they interact with each other, the foreign scholar, and the industry people). Equally important, the interaction between the faculty and business people, combined with the pragmatic and industry specific approach of the study, should enhance the university's credibility with, and benefit to, the business community.

Once the credibility of CIPS is established, it should be able to obtain substantial outside funding from government, industry, and other research organizations. At the present time, it is being partially funded by a grant from the James C. Self Foundation. Establishing good relations with these groups should also benefit other research projects at USC that seek funding. In addition, the conferences planned at the end of the projects should bring important business and government leaders to the campus. The latter should help the placement of USC graduates and the marketing of other continuing education programs. Finally, these kinds of research projects should each result in at least one or two doctoral dissertations or master's theses from the graduate students who will be involved in the projects as research assistants.

For more information concerning the Center for Industry Policy and Strategy and its operations, please contact Dr. Arpan at 803-777-4445 or 803-777-2510.

South Carolina at the Crossroads

By The Honorable Rembert C. Dennis

1939-'82

The year 1939 was a late Depression Year in South Carolina and elsewhere in the nation. You could get a loaf of bread for a dime, and you could buy a pretty good new car for less than $1,000. It was my first year in the General Assembly, and the operation of state government cost a total of $7.8 million.

Today, you're more likely to pay seventy-five cents for a loaf of bread, and $10,000 is not considered an exorbitant price to pay for a good new car. As far as the operation of state government is concerned, $7.8 million would be just enough to operate one mid-sized state agency — like Lander College or the Commission on Drug and Alcohol Abuse — for one year. The budget for 1982-'83 will run in the neighborhood of $4 billion for South Carolina — that includes federal and state dollars — yet it constitutes what most governmental and legislative leaders concede will be a very, very tight budgetary year.

Such numerical comparisons are staggering, but they should be addressed only in the context of a number of considerations, including inflation, interest rates, and economic expansion, as well as the overall growth of South Carolina government and its services. The state population itself has increased significantly since that time, having the concurrent effect of increasing the demand for services, as well as expanding the tax base to support those growing services. All the same, however, it is an interesting exercise in both political and economic analysis to trace that 43-year period of governmental growth in this state, a period that conveniently spans my service in the General Assembly, and a period that also conveniently frames what may well be considered three separate eras of economic and governmental expansion in South Carolina. It is important to realize, initially, that the political and economic destinies of this state traditionally have been closely related. South Carolina in the late 1930's was a state still reeling from the effects of a post-civil war collapse, as well as the subsequent economic catastrophes that befell the state's essentially cotton-based agricultural economy. Unlike wealthier, more industrialized states elsewhere in the country, South Carolina could hardly command a great deal of attention from the financial community on the basis of its resources or growth potential. FDR himself had already labelled the South as the nation's number one economic problem, and others were calling it an "economic backwater" of the nation, a characterization that would stick with the South until somebody came up with the term "Sunbelt" three decades later.

It took political commitment to economic stability in those economically unstable days to earn

South Carolina fiscal respect. That linkage — between the governmental and the economic — was already in place when I arrived in the General Assembly in 1939. Senator Edgar Brown of Barnwell was, at that time, the chief architect of the state's financial planning and policy, although it was far from a one-man job. In the Finance Committee itself, where Senator Brown presided with great personal power and political persuasiveness, he was ably assisted by Senator R. M. Jefferies of Colleton County, with whom I served as desk mate in the Senate, and from whom I learned a great deal as a young, rural senator. Later, and until this day, I have had the honor and great privilege to serve as the desk mate of Senator Marion Gressette of Calhoun County. Senator Brown was the orator and the politician who could guide, steer, and prod the Appropriations Bill to its conclusion every year, and Senator Jefferies was the "details man," ever at Senator Brown's side. They made a great team, and Senator Gressette joined in support of the fiscal matters. With Senator Jefferies' departure, I inherited the job as Senator Brown's "details man," and got a good schooling in governmental finance, as well as political reality.

The Honorable Rembert C. Dennis is a member of the South Carolina Senate and Chairman of the Senate Finance Committee. He attended school at Pinopolis, graduated from Berkeley High School in Moncks Corner, and during his first three years of high school also served as a page in the South Carolina Senate. Upon graduation from high school, Dennis attended Furman University where he was elected for two years as President of the Student Council, was named to **Who's Who Among College Students in America**, and was graduated in 1936. Upon graduation from Furman, Senator Dennis took a position with the U.S. Maritime Commission in Washington, and attended Law School at Georgetown University. He graduated from The University of South Carolina Law School in 1940, two years after he had been elected to the House of Representatives from Berkeley County. Dennis served two terms in the House, before being elected to the South Carolina Senate in 1942, where he has served continuously. Senator Dennis is a third generation of Dennises to serve in the South Carolina General Assembly. Collectively (including his father and grandfather), the Dennises have served Berkeley County 73 years in the General Assembly: 57 years in the Senate and 16 years in the House. In 1972, Senator Dennis succeeded Senator Edgar A. Brown of Barnwell as Chairman of the Senate Finance Committee. He is also a member of the Budget and Control Board, and is second only to Senator L. Marion Gressette of Calhoun in seniority in the Senate, having now served without interruption the last 38 years. Senator Dennis has been a member of the Executive Committee of the State Democratic Party since 1944, is an Ex Officio Member of the South Carolina Wildlife and Marine Resources Commission, and is a former Member of the Boards of Trustees of Baptist College at Charleston and Furman University. Over the years, Senator Dennis has been the recipient of many awards. A few of these include his being named Conservation Legislator of the Year, 1965 and 1974; accorded an Honorary Doctor of Humane Letters Degree from the Medical University of South Carolina, 1973; accorded an Honorary Doctor of Laws Degree from The University of South Carolina, 1973; named one of Ten Outstanding Legislators in the United States by the Assembly of Government Employees, 1980; accorded an Honorary Doctor of Laws Degree from Clemson University, 1981; accorded an Honorary Doctor of Laws Degree from The Citadel, 1981; and named 1981 Legislator of the Year by the South Carolina Chamber of Commerce. In addition, Senator Dennis' record on labor and industries for Berkeley County has been outstanding. For the year 1973, the county industrial investment was $213,308,000.00. Senator Dennis pushed for greater investment, and the amount in 1976 was $434,450,000.00. In 1977, he sought more jobs for Berkeley County, raising the investment to $663,435,000.00. In 1978, Berkeley was number two in industrial investments in the state with a figure of $943,457,000.00. 1979 saw Berkeley County investments reach more than $1 billion, the first county in South Carolina to reach this height.

Further, the tax base of Berkeley County has grown from less than $10 million 10 years ago to $120 million this year. In population growth, it is among the top three counties in the state (second in last decade).

Across the lobby in the House of Representatives, leadership came from men such as Charlie Verner, Win Smith, Bill Rhodes, Jim Aycock, Bob McNair, and, of course, Sol Blatt and others, able politicians and staunch conservatives when it came to South Carolina's fiscal policies. Jeff Bates and Jim Smith were managing the state's money in those days, and the political and economic mix was clearly one that zealously protected South Carolina as a stronghold of tightly-managed and controlled governmental finances. A glance at the state's balance sheets from those days reveals the kind of top-to-bottom execution that went into the South Carolina state budget and planning.

Wartime budgeting and expenditure in South Carolina, under the leadership of Senator Brown and his legislative and executive colleagues, brought the state into the postwar years not wealthy, but in a position of remarkable stability. In only one year a deficit resulted, and a downward adjustment in expenditures (1941-'42) not only covered the deficit, but also left a comfortable surplus with which the state was not only able to cushion a gradual growth in expenditures, but also to make substantial debt retirement payments.

KICKBACKS

It was also during the wartime years that the property tax was discontinued as a source of revenue for state government (1943), and was reserved solely for local governments. Shortly thereafter — as revenues accumulated in the state's

TABLE. South Carolina State Government Summary Income Statements, 1940-'45

Item	1940-'41	1941-'42	1942-'43	1943-'44	1944-'45
Expenditures	$19,648,728	$13,969,516	$23,877,572	$24,446,338	$30,011,839
Revenues	18,519,041	19,414,871	24,646,749	26,643,389	27,127,826
Adj. for surplus or deficit		(1,129,687)	4,315,668	5,084,845	7,281,895
Total revenue	$18,519,041	$18,285,184	$28,962,417	$31,728,234	$34,409,721
Difference	($ 1,129,687)	$ 4,315,668	$ 5,084,845	$ 7,281,896	$ 4,397,882
			$ 6,800,000	$ 3,000,000	$ 5,459,217
			From Surplus to Retire Debt	From Surplus to Retire Debt	From Surplus to Post-War Reserve Fund

Source: South Carolina Budget and Control Board.

postwar surplus — a further step was taken to provide monies to local governments: the institution of the so-called "kickback" of funds from the state to the local level.

The idea for a "kickback," in fact, was a product of one of those many nighttime talking sessions that characterized the General Assembly in those days. I was a rural senator then — Berkeley County was almost entirely rural — and my roommate was an urban senator named O. T. Wallace from Charleston. Between the two of us one night, we came up with the idea of the kickback of the income tax, and then Dick Jefferies and I are the ones who originated the kickback for farm-to-market roads, along with Senator Gressette and Senator Wilbur Grant of Chester. There has been a great deal of talk over the years about the great differences between the interests of urban and rural senators — and there certainly have been great differences. During those nighttime talk sessions in the hotel rooms in those days, though, urban and rural senators could also get together on a great many things that could benefit the interests of both.

Over the years, state-shared revenues and property taxes have formed important foundations of local government financing in South Carolina. Aid to Subdivisions alone has grown from $11.4 million in 1950 to an anticipated $125.9 million for fiscal 1982-'83. Both sources, however, in recent years have tended to lack the stability and growth potential needed by local governments. "Freezes" in state-shared revenues going to local governments occurred during the periods 1950-'54 and 1974-'78. Further instability was caused by the institution in 1972 — and subsequent dismantling — of federal revenue-sharing monies going into local governments in South Carolina.

These erratic characteristics of funding sources have tended, in many cases, to shift additional burden to the property tax as the main support of local governments in the state. Particularly with the institution of "Home Rule" legislation in 1975, local governments have aggressively sought to break free of their heavy dependence on these two sources and to establish stronger and more growth-oriented funding sources. Any action in the immediate future that would establish new funding sources for local governments would thus alter significantly for the first time in 40 years the local government funding patterns that were established by the wartime and postwar General Assemblies in South Carolina.

The term "kickback," of course, was always a highly political term, and a highly political issue. In reality, it involved a number of different tax sources — income tax and gasoline tax primarily, but to a lesser degree over the years bank tax, beer and wine tax, alcoholic liquors tax, mini-bottle tax, insurance tax and brokers premium, and homestead taxes. In those early years, it was also considered a special political favorite of the smaller counties, who supposedly had a tougher time than the urban counties in funding their local government operations. Senator Gressette and I, in fact, were considered champion kickbackers of those days, and didn't hesitate to go to war to generate additional monies for school districts and other needs of our counties.

It's interesting to note, however, as a footnote to the history of "kickbacks" in the state that during the 1976 session — Governor Riley's last year as a state senator from Greenville, that he and Senator Harry Chapman, also of Greenville, sponsored an amendment to take the state's $21 million surplus and kick it back to the counties. I told Senator

Gressette then that we had been supplanted by much bigger kickbackers from the urban counties.

TRANSITION

South Carolina's transition from a rural to a more urbanized state was a gradual and evolutionary matter, and was related to a number of governmental and economic trends that began to take shape and form during the postwar years. Although the periods overlap, for the sake of emphasis, it is convenient to divide the state's governmental development during this time into three periods: (1) 1939-'51, (2) 1951-'69, and (3) 1969-present. These three periods are delineated by major revenue and taxation decisions by state government. While such decisions, in themselves, do not define these periods, they are the kinds of policy shifts and judgments that do represent major changes in the state's direction.

1939-'51

The first period (1939-'51), as described earlier, was a period of fiscal stabilization in which Senator Brown and other leaders of the state firmed up South Carolina's commitment to financial conservatism, and established important state-local funding relationships through "kickbacks," and through the designation of property taxes as a local revenue source only. By the decade of the 1950's, however, South Carolina was emerging from the postwar period looking beyond year-to-year needs and stabilization of the status quo. Important organizational changes were taking place in state government, including the establishment of the Budget and Control Board as the fiscal management entity within government, and a much more sophisticated budgetary process began to take shape. In the earlier days, budget planning was what might loosely be termed "educated guesses" on the part of a few people. But those few people — such as Jeff Bates, Jim Smith, and others — were remarkably perceptive and accurate in their revenue forecasts and their ability to work with the legislative leadership of both houses in making revenues match up with the state's needs and expenditures. Even before the days of formal economic forecasts and computer programs, these individuals built a reputation for economic foresight that has carried forward to this day.

As it entered the 1950's, South Carolina became increasingly aware of the fact that some significant changes had to take place if it were to escape being an "economic backwater" of the nation, as the South had been described. The state's attention was drawn specifically to education, and to the clearly-defined problems and deficiencies that lay there. Political issues aside — and there can be no question that the court decisions of those days had a direct impact on the state's planning — South Carolina was facing a long, uphill fight to get its public education system into a competitive position with other states. For decades, tens of thousands of citizens had been leaving the state in search of jobs elsewhere in the urban areas of the nation. In 1950, the median school years completed by the adult population of the state was 7.6, almost a full 2 years below the national average, and 1 year below the Southeastern average. Not only were we lagging nationally — we weren't even keeping pace with our neighbors.

Fewer than 19 percent of the adults in the state had completed their higher education, a figure 50 percent below national figures, and it appeared that the state was locked into an economic-educational cycle that could seriously inhibit and restrict the growth potential of the entire state. Thus came the state's first retail sales tax in 1951, an educational and economic milestone for South Carolina. It was not born easily. During the administration of Governor James F. Byrnes, it was generally agreed by legislative and executive leadership that the state's tax base as it was then structured could not support the kind of expansion and improvement needed so desperately by the state for education. There was a great deal of tribulation about the sales tax, and it's understandable that the public never gets enthusiastic about a new tax, particularly one that will add 3 percent to practically every purchase made in the state.

But — there was also understanding that the money would go for public schools — and only public schools — and the original language of the legislation in 1951 made it clear: "In addition to all other licenses, taxes, and charges now imposed, there is hereby levied for the support of the public schools in South Carolina . . . ." Thus came into being another revenue source for the state, and an important new direction for the state to pursue. Government got into the business of making things happen where there was a clearly-perceived need. Just as there had developed a gasoline tax to get the farmers out of the mud in the 1920's, so there came into being the sales tax to get South Carolina's public education system out of a serious, and potentially tragic, rut.

1951-'69

The sales tax has evolved over the years as a primary component of the state's revenues because its growth has been directly related to the expansion of economic activities in the state. Performance of the sales tax as a revenue source quickly gave the state access to new funds to pour into public education, and over the years, that linkage has sustained educational growth and improvement in our state. Measurable improvement in educational levels became apparent shortly thereafter. By 1960, median school year attainment had increased by more than a year — from 7.6 to 8.7; illiteracy had dropped from 7.9 to 5.5 percent of the adult population; and adults with a high school education or better had risen from 18.9 percent to 30.4 percent of the population during the decade.

The public school advances triggered by the sales tax set in motion more forces for growth in the state in the immediately ensuing years. Significantly, there were five ventures characteristic of what I consider a "new spirit" of innovative and aggressive thinking that emerged in the late 1950's and early 1960's, and which laid an entirely new policy foundation for the state. I shall enumerate and comment on them briefly below.

Educational Television

Created by the 1960 General Assembly pursuant to study headed up by my old colleague Senator Jefferies, Educational Television (ETV) came into being as a means of utilizing electronic advancements to hasten South Carolina's achievement of uniform educational quality throughout the state. Beginning in 31 schools in 11 counties, ETV now has an enrollment of more than 1.8 million for its courses, and has proven to be an enormous resource for business and industrial training, as well as for cultural activities. Before a state building was constructed and named in his honor, Senator Brown once said that the Educational Television network was the only monument he wished to have in this state.

Ports Authority

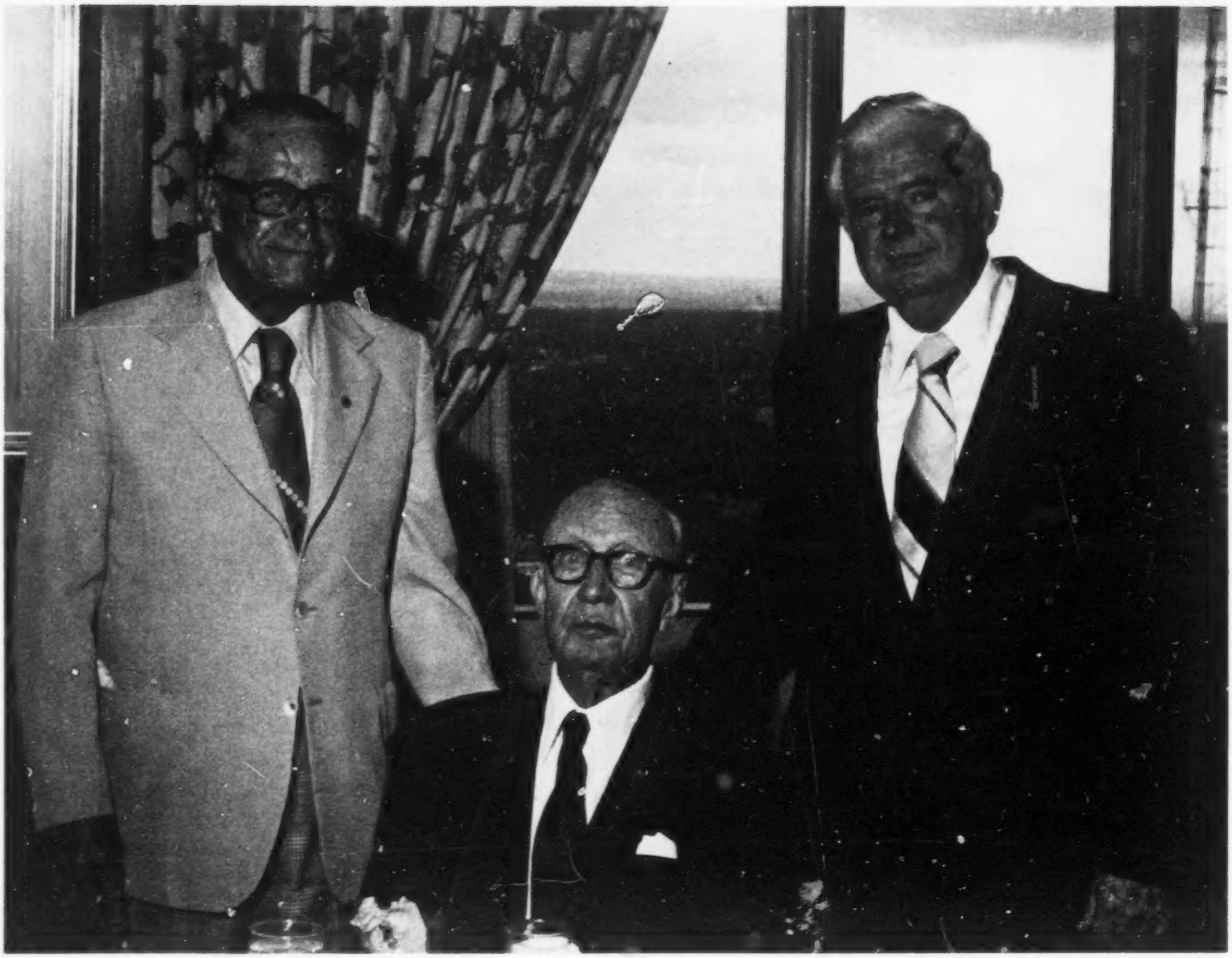
Even though the ports of Charleston, Georgetown, and Beaufort had been consolidated under a single Ports Authority by the wartime General Assembly of 1942, the state's ports were in sad shape following the war. Charleston ranked 65th in tonnage in the nation, and there were no regular steamship lines calling at the port. Between 1947 and 1957, the state struggled — with the help of the textile industry, but with little in the way of fiscal resources — to rebuild the ports. It was a report from a committee chaired by the late Charles Daniel of Greenville that triggered a $21 million bond issue — unanimously approved by the General Assembly — that launched the emergence of South Carolina ports as an economic force for the state and the nation. Charleston is now 12th in the nation, and between 1956 and the end of the 1970's, tonnage had increased from 684,000 to 4.3 million. University of South Carolina economists estimate that the economic impact of ports operations throughout the state is $1.3 billion, affecting 42,310 jobs.

Development Board

During the administration of Governor Ernest F. Hollings (and before) and with strong legislative involvement, the state began to initiate new efforts to attract industry in the late 1950's and early 1960's and to diversify its economic base away from an undue dependence upon textiles. A key part of that effort was the 1954 reorganization of the State Development Board, and its reorientation as the state's major industrial "salesman." While the state did succeed in attracting $16.2 billion of new and expanded industry between 1960 and 1981, textile capital investment also rose from $700 million to more than $1.5 billion, and textile jobs stabilized at around 125,000.

Technical Education

As a companion to the State Development Board in the state's new "sales pitch" of the 1960's, the technical education system came into being during this same period. The TEC system gave new industry something they hadn't seen anywhere else — training and retraining of workers at no cost to the industry. It made South Carolina a front-runner, and gave us a head start over competing states in economic growth. Today, the system grows more sophisticated and gears up for a new day of training needs in the state, but the concept is still the same — making technical training related directly to the economic needs of the state. During the 1960's and 1970's, enrollment in technical education rose from 1,122 to more than 157,000, and by 1980, the state was operating 16 centers serving every section of the state. During those years, the cumulative enrollment in South Carolina's TEC system was almost 1.5 million.



Left to right: Senator L. Marion Gressette, Calhoun County; the late Senator Edgar A. Brown, Barnwell County; and Senator Rembert C. Dennis, Berkeley County.

Parks, Recreation, and Tourism

During the administration of Governor Robert E. McNair, and again with strong legislative support, the Department of Parks, Recreation, and Tourism was created in 1967, combining elements of three state agencies. That move marked the beginning of South Carolina's new, aggressive posture in attracting tourists — and tourism dollars — to the state. Between 1972 and 1980, the total number of travelers to the state increased from slightly more than 26 million to more than 38 million, and the money spent by those travelers rose from $473.1 million to $2.2 billion. It is estimated that tourism accounts for more than 75,000 jobs in the state, and generates state revenues in excess of $100 million.

The decades of the 1950's and 1960's were unprecedented in terms of growth in South Carolina. Out-migration trends were stabilized and reversed, and population grew during the 20-year period from 2.1 million to 2.6 million. Under the impetus of the new economic policies of the late 1950's and early 1960's, per capita income doubled between 1959 and 1969 — from $1,349 to $2,767.

1969-PRESENT

Even so, there was growing concern toward the end of the 1960's that the state "was peaking out," and that the momentum developed in the early 1950's had almost spent itself. There was growing evidence that for all its advances, South Carolina was still not making up much ground in relation to other states.

Once again, focus centered on education — this time looking at two specific areas of demonstrable deficiency — dropouts and preschool. Far too many South Carolina youngsters were giving up on education around the eighth, ninth, and tenth grades, and far too many children were coming to the first grade unprepared and being forced to repeat that grade.

A document popularly known as the "Moody Report" focused attention on those issues, among others, and rallied the state — under Governor McNair's leadership — to its next major tax restructuring to meet educational needs. This time — as compared with the 1951 sales tax initiative — there was a wide-ranging, multitax "package," or "scattershot" approach. Included in the 1969 "package" were increases in the sales tax ($0.03-0.04), the corporate income tax (5-6 percent), the alcoholic liquors tax ($4.05-4.17 per gallon), beer tax ($0.640-0.768 per gallon), and cigarettes ($0.05-0.06 per pack). Once again, there were emotional and political forces in opposition, but practicality and necessity carried the day, and launched what I consider the third major era of the state's fiscal and economic growth (1969-present).

This era has been characterized by an extension of the efforts and commitments of the early 1950's, with special concentration in certain areas defined in the 1968-'69 new revenue package. Specifically, in early childhood education, enrollment rose dramatically from 3,435 to 33,471 between 1969 and 1978, and more recent statistics indicate that all but around 1,500 five-year olds in the state are attending kindergarten. That's a far cry from the pre-1968 days, when 1 out of every 10 children attending the first grade had to repeat that grade. Today, preparedness tests show dramatic improvement in first graders' abilities as they enter the public school system.

The 1970's brought many more complex issues to the doorstep of state government. Significant increases in federal funds flowing into the state — along with the additional 1969 tax sources and the overall economic expansion of the state — drove up state government annual expenditures between 1965 and 1980 from $325 million to $3.5 billion. Federal funds alone during the period grew from $77 million in 1965 (23 percent of the state's budget) to $1.0 billion in 1980 (33 percent of the state's budget).

Debt service, once considered an almost incidental part of budget planning in the wartime and postwar years, grew to such an alarming extent during the expansionist years that by 1982-'83 it is estimated to reach $119 million, or 5.7 percent of General Fund revenues. Enactment of the Capital Improvement Bond Act and its subsequent revision in 1975 strengthened the state's control of long-term commitments, and recently enacted restraints by the legislative and executive branches have slowed the growth of this expenditure item. Creation of a 5 percent Reserve Fund — while only articulating a long held position of fiscal conservatism going back to the 1930's and earlier — gave the state further financial undergirding in 1978. That fund has proven useful during the recession days of 1981 and 1982, too.

The fiscal commitment of 1951 to public education continues to this day, even stronger. Passage of the Education Finance Act in 1978 gave this state a formulary approach to the funding of education, and provided a guarantee of educational quality in every school district of the state. True to the commitment, education accounts for fifty-six cents of every dollar of state revenues for fiscal 1982-'83, far more than the income from the retail sales tax, now estimated to account for thirty-six cents of every dollar of revenue.

Even before enactment of the Education Finance Act, per pupil expenditures in South Carolina had risen from $220 in 1960 to $1,350 in 1978, and are much higher now. Between 1970 and 1978, enrollments in public colleges and universities in South Carolina almost doubled, growing from $36,936 to $67,598. Coupled with TEC enrollments and private colleges, that meant that nearly a quarter of a million South Carolinians were pursuing post high school educational degrees.

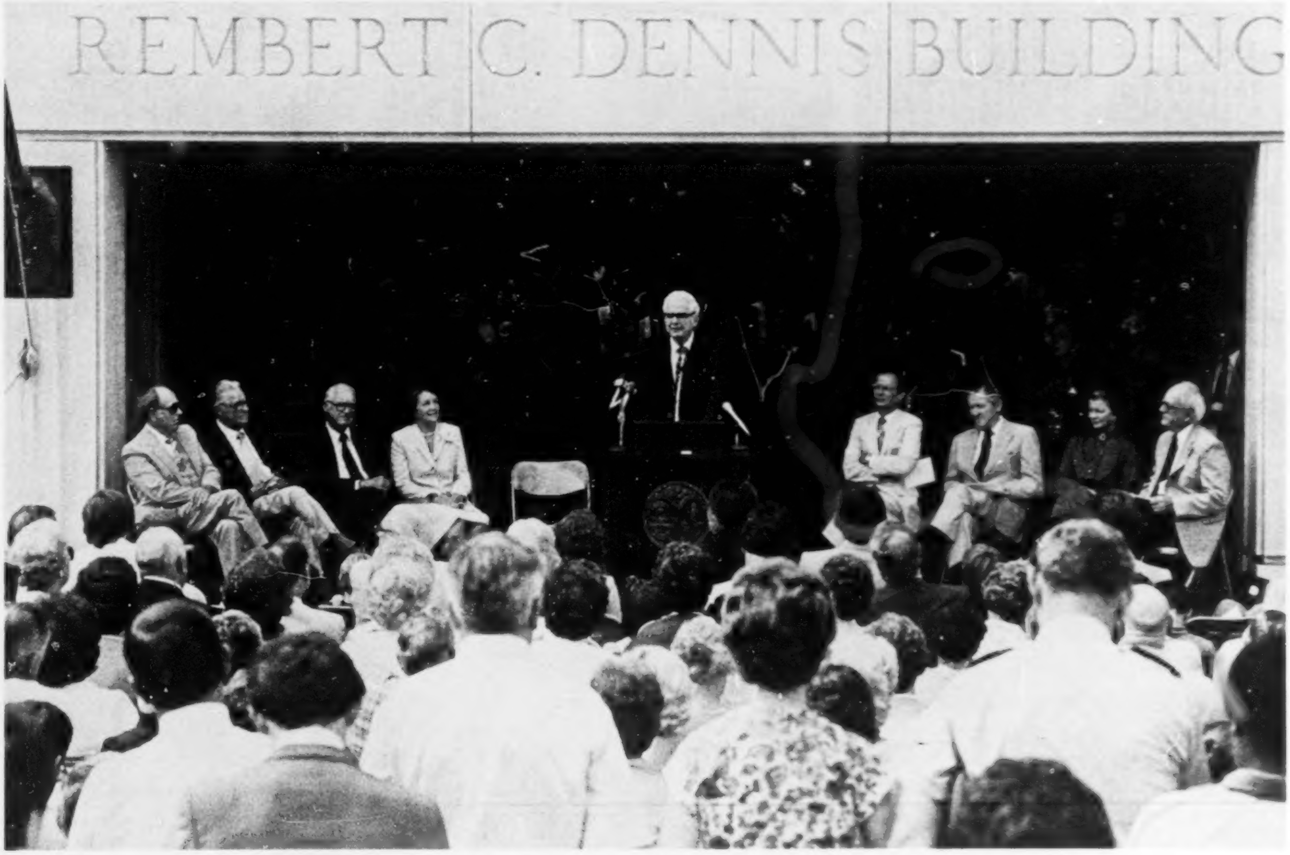
In addition to all the economic-related developments during the 1970's, there have been governmental changes that have also directly affected the state's economic and financial posture. As mentioned earlier, the Home Rule Act of 1975 severed the umbilical cord between state and local governments, and intensified local government's need for additional funding resources. Reapportionment of the State Senate in 1966 and the adoption of single-member Districts for the House of Representatives in 1980 further eroded the county orientation of the legislature, weakened rural counties' representation, and fragmented many traditional leadership elements in the General Assembly. The adoption of a constitutional amendment in 1980 authorizing Governors to seek a second consecutive term is also viewed by some as a potential factor that could strengthen the executive branch of government in South Carolina.

For all the changes and potential changes projected for the 1980's, however, it is important to recognize that certain elements have remained steady and constant over this entire period. Mainly, the state's traditional fiscal conservatism has survived intact, and — if anything — grown stronger. The state has not only lived up to the spirit of its 1895 Constitutional requirement for a balanced budget, it has also lived up to the letter of that provision, and surpassed it. South Carolina's Triple-A Credit Rating still makes it distinctive among the states, and a preferred customer on Wall Street. The spirit of such men as Edgar Brown, R. M. Jefferies, Jeff Bates, and Jim Smith has been kept alive and functioning over the years through men such as Pat Smith, Dusty Rhodes, and Henry Mills, and down to our present day with such leaders as Senator Gressette, Grady Patterson, Earle Morris, William Putnam, and Edgar Vaughn.

The state still keeps its expenditures within projected revenues, and, on 4 occasions in the last 12 years, that's meant shaving expenditures in midyear to account for unexpected downturns in revenues. If anything, the spirit of fiscal conservatism is still very much alive with recent legislative action to control the state's annual growth of spending and constitutional proposals to lock in principles of fiscal conservatism.

Thus, as the French author Alphonse Karr (1808-1890) wrote in **Les Guepes,** "The more things change, the more they remain the same." As in 1939, South Carolina faces the future with a determination to maintain its fiscal integrity and stability. As in 1951, it recognizes the link between education and economic growth, and makes that its firmest commitment. And — as in 1969 — it views the generation of new tax revenues as a means of investing in future needs and economic growth.

Significantly, 1982 brings us to what I consider the conclusion of another era of South Carolina's growth experience — the period that commenced with the economic commitments of 1969. Other forces, and other factors, have come into play in



Rembert C. Dennis Building dedication ceremonies July 16, 1981. Left to right: The Rev. Mr. Norman E. Gillespie, First Baptist Church, Moncks Corner; Senator L. Marion Gressette, Calhoun County; The Honorable John C. West, former Governor of South Carolina; Mrs. Rembert C. (Natalie Brown) Dennis; Senator Rembert C. Dennis; The Honorable Richard W. Riley, Governor of South Carolina; The Honorable Robert E. McNair, former Governor of South Carolina; The Honorable Nancy Stevenson, Lieutenant Governor of South Carolina; and the Rev. Dr. George E. Meetze, Chaplain of the South Carolina Senate.

recent years that now require our new consideration and attention.

Only six states in our nation — Texas, Oklahoma, Louisiana, Alaska, Wyoming, and Montana — are piling up surpluses these days, and that's because of their energy resources. Most of the rest of the states are struggling to make ends meet, and South Carolina is once again finding the struggle a little tougher than most. News that Congress and the Administration in Washington are reducing the flow of federal funds into South Carolina by $200 million during fiscal 1981-'82, and probably more in subsequent years, amounts to nothing less than a major shock to our financial structure. As well as this state may be able to plan, budget, and allocate its resources, the time has arrived once again when South Carolina needs to look toward its own economic needs.

While it's politically hazardous to talk about new taxes these days, it may be even less pleasant to anticipate the kind of reduction in public services to the people of the state such reductions in federal funds require. If additional revenues are not generated for the state in the near future, I see serious consequences in the delicate and extremely important areas of services to people — health services, corrections, mental health, mental retardation, and many others. These types of services are bound to suffer under a federal funds cutback and the state's own inability to fill the financial gap. It's going to be tough for the state, and for local governments as well, and we've got to plan for them together. Whether they're paying state, local, or federal taxes, we're talking about the same group of taxpayers who are going to bear the burden. That's why I believe that whatever additional taxes may be considered should be established on some kind of sharing basis with local governments. Otherwise, we run the risk of adding to the burden currently being faced by the property owner, a burden that's already heavy enough.

We're at the crossroads in 1982 — just as we were in 1951 and 1969. We either move the state forward with additional money for services, or we continue to be at the bottom of the list among the states, a category that has not been desirable to us over all these years.

While it's easy and overly simplistic to look at a comparison of raw numbers between 1939 and the present time, it's far more significant to look at the changes that have taken place in South Carolina in the last 43 years, and to judge whether we got our money's worth. Even more significantly, it's interesting to speculate where we'd be today if we had not taken the difficult steps in 1943, in 1951, in 1969, and subsequently to meet the needs of the people of South Carolina. Governmental expenditures cannot be viewed in isolation, as if they were in a test tube. The ultimate bottom line of government budgeting and planning does not really show up in any ledger sheet. It shows up in the schools, on the streets, in the parks, and in the offices and factories that have been affected by the allocation of those governmental dollars in this state.

The South Carolina Economy in the 1980's

By James A. Morris

The economies of the state and the nation have begun the 1980's in an inauspicious manner, with a recession in each year. As the decade opened, the nation and the state were experiencing difficult economic circumstances as compared with those of the 1960's and the 1970's as a whole, with the 1980's characterized by abnormally high rates of inflation and unemployment, low levels of investment and productivity, restrictive regulation of the private sector, and instability in growth patterns. Actions taken by the new administration in Washington to deal with these problems by reducing the level of government spending while making essential improvements in the nation's defense posture, by controlling inflation, and by providing tax incentives for economic growth, have not yet had the desired effects of increased growth with stability. Nor has there been time for them to work!

Progress has been made in reducing levels of inflation and interest rates to some extent, primarily through restrictive monetary policy, but at the cost of recession and a widening of the federal budgetary deficit. The objective of eliminating the chronic deficit in the federal budget within a few years has become more difficult with the reduction in revenues resulting from recessionary growth conditions and the imperative necessity of raising defense spending significantly to meet security needs. That problem is being worked on by Congress and the Administration who hope to find the proper admixture of budgetary cuts and perhaps tax increases such as excise taxes. The challenge is to maintain and accelerate the pace of the Reagan Program while narrowing the budgetary deficit.

The immediate economic outlook is for continued negative growth until the spring or summer of 1982, when the inventory disinvestment process is completed and the combination of a stimulus to spending, especially for housing and automobiles, arising from lower levels of inflation and interest rates and from income tax cuts, will produce results. Real GNP should increase at annual rates of 4-5 percent during the third and fourth quarters of 1982, with prices continuing to moderate but with unemployment remaining at unacceptably high levels. The economy of South Carolina will move with that of the nation, and it is anticipated that real personal income will rise about 2 percent during the year as a whole, accompanied by increases in employment.

Beyond 1982, the potential exists for a period of prosperity continuing through the decade of the 1980's. The basic factors conditioning growth stem from changing demographic patterns, expectations of rising levels of investment and technological improvement, and reasonable stability in the availability and cost of energy.

The labor force is projected to increase at lower rates during the 1980's than during the past two decades because of slower population growth and a stabilizing of the female participation rate. Another significant demographic factor is the composition of the population which will be reflected during the decade by a higher proportion of the labor force's being in their prime working years. The problem of training large numbers of new entrants will be reduced, with an accompanying effect on productivity.

In specific terms, the national labor force is expected to rise by 17 percent in the 1980's, as compared with 27 percent in the 1970's, and to be weighted toward more mature workers. Since increases in the labor force represent over one-half of the potential for growth in output, smaller increases in output are likely. At the same time, actual output could be closer to potential if productivity can be stimulated by higher levels of investment and a better trained work force.

Population and labor force trends in South Carolina during the 1980's should be similar to those of the nation, with the exception that the potential exists for significant in-migration in the former as economic opportunities expand. Nonagricultural employment in South Carolina has the potential to rise by an average of 2 percent per year during the decade.

Another important factor in economic growth is change in the level of investment in business facilities, which did not perform well in the 1970's. Improvements in the business tax burden will tend to stimulate capital investment during the 1980's, if credit conditions and output expectations are favorable, as anticipated. Real increases in business fixed investments of about 4 percent per year are projected for the 1980's, with some quickening of the pace of technological change.

The outlook for energy during the 1980's is for continuing emphasis on conservation and gradual increases in domestic supplies of various sources. Barring any general confrontation in the major oil producing regions, supplies of energy should be ample and price increases moderate, as compared with the 1970's, with the primary increase in demand coming from the developing nations. Even after the current glut of oil is absorbed, perhaps by 1983, price increases should not average more than 10-11 percent per year. In essence, then, energy

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supplies and prices should not be limiting factors in growth or contribute as significantly to inflation as in the prior decade.

The potential for growth in the national economy, based on these conditioning factors and reasonable monetary and fiscal policy, is for rises in real gross national product averaging 3.5 percent until the latter part of the decade when growth potential will lessen somewhat because of demographic factors. Investment spending is expected to rise faster than consumption spending, and government spending at all levels is expected to increase at lower rates than it did during the last two decades. The key sectors of automobiles and housing should return to more normal growth patterns by 1983, and corporate profits to traditional rates of 10-12 percent. It is anticipated that price increases will moderate from present levels but will still be higher than those prevailing in earlier decades. Similarly, interest rates, both long- and short-term, should ease, but remain at historically high levels.

This is the framework within which projections in economic growth for South Carolina can be estimated for planning purposes. It cannot be overemphasized that long-range projections are based on estimates of changes in real factors such as labor force, investment in productive facilities, and technology, and are primarily useful for measuring **potential** for growth.

Assumptions about reasonable stability in the world order, and the absence of such extremely disturbing events as wars, major interferences with supplies of basic materials, and prolonged droughts are inherent in the estimating process. Whether the potential for economic growth is actually achieved at any time or place depends on a myriad of factors which include reasonable and sound government economic policies, as in the

The South Carolina State House, completed in 1907, stands overlooking its capital city, Columbia.

monetary and fiscal spheres; social stability; and incentives to work and save. Given an understanding of these limitations, projections of future growth can provide a useful basis for planning in such areas as private investment and government budgets.

The short-term outlook through 1983 for the state's economy will reflect national conditions, with an upturn beginning in mid-1982 and picking up momentum through 1983. Growth in real personal income, the basic indicator, should occur at rates of about 2 percent for 1982 and 3-3.5 percent for 1983. Total employment is expected to rise slightly in 1982, but increase by 3 percent in 1983. Unemployment will continue to lag at undesirable levels until the full momentum of economic expansion is felt.

The potential is present for higher rates of economic expansion in the state than in the nation during the balance of the decade of the 1980's, following the pattern of the two previous decades. Real personal income is anticipated to expand at rates of about 3 percent per year, with some tapering off in the latter part of the decade as labor force increases moderate because of population changes. Total employment should rise by 1-2 percent per year with accompanying favorable effects on levels of unemployment. The trends toward greater expansion of employment in durable goods production and the trade and service sectors than in nondurable goods production and government are expected to continue during the decade. Because of the relative advantages of the state as a location for production, it should benefit more than the nation as a whole from the expected significant increases in investment spending in this decade. It is anticipated that trade and service sectors will grow faster than manufacturing, but that the industrial activities will continue to be the dominant factor in generating expansion of income and employment.

A set of annual projections for the decade, useful primarily for planning purposes, are provided by the SCOPE econometric model which is maintained by the office of the State Economist. These projections are shown in the following table.

TABLE. Projections of Rates of Change in Selected Indicators of South Carolina Economic Activity

Year	Real Personal Income	Nonagricultural Employment	Industrial Production Index
1981	2.7%	0.1%	-1.0%
1982	1.7	1.1	0.1
1983	3.7	1.5	7.0
1984	3.0	2.3	8.9
1985	2.9	2.4	7.9
1986	2.8	2.3	7.2
1987	2.5	2.2	6.6
1988	2.4	2.2	7.1
1989	2.4	1.8	6.9
1990	2.3	1.4	5.4

Source: Forecast of SCOPE Econometric Model, December 1981.

The essence of the matter is that the economic outlook, for the decade of the 1980's, based on real factors and reasonable expectations of government policies, is for steady growth at levels somewhat below those attained in the last two decades when there was a higher level of inflation. As the nation and the state emerge from the current transition period of economic instability brought about by positive efforts to deal with such unresolved problems of the 1970's as inflation and low levels of productivity and investment, there appears to be a sound possibility of consistent growth with greater stability. Its actual achievement will depend on whether the nation is willing to make the necessary adjustments in spending and working habits to achieve growth without the side effects of unacceptable levels of inflation.

These projections have significant implications for business and government decision makers. The South Carolina economy should expand at rates that encourage investment in business facilities, both by companies that find locational advantages attractive and by the existing complex of enterprises in manufacturing, trade, and service industries. Emphasis must be placed on investments that raise levels of productivity and conserve scarce resources if we are to meet the test of enhanced competition. Government leaders are faced with difficult choices because of reductions in federal spending and anticipated declines in the rate of increase in revenue collections, as well as increased public needs from an expanding and changing population base. It can be projected, for example, that General Fund revenues for the state will rise by an average of 10 percent on an annual basis during the decade, counting both real growth and inflation, as contrasted with an average of 12.85 percent during the 1970's. The necessity for an insistence on productivity and an ordered set of priorities in public spending at all levels cannot be overemphasized.

BUSINESS AFFILIATES

The Business Affiliates program of The USC-Business Partnership Foundation, chartered in 1977, is designed to attract business investment and participation in the programs of the College of Business Administration. Advantageous to both, this program benefits the business community through better prepared graduates and higher levels of professionalism of employees who participate in the graduate or continuing education programs, and the college through a new sense of relevancy and realism from corporate and business involvement.

Membership funds supplement university appropriations and provide for faculty development, student aid, and program and research support, as well as development of a professional business library within the college. It is the foundation's hope that this will prove to be an ever-expanding partnership program for the college and the business community.

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Geiger, McElveen & Kennedy
General Electric Co.
General Telephone & Electronics Corp.
Gerald R. Callahan
Greenwood Mills
Greenwood Packing Company
Greenwood Savings & Loan Association
Gregg-Graniteville, Inc.
Hergeth, Inc.
Horsman Dolls, Inc.
Industrial Store Managers Association
Inman-Riverdale Foundation
International Business Machines Corp. (IBM)
Intex Products, Inc.
Jeff Hunt Machinery Company
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North Carolina National Bank
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Budgeting and Expenditures in South Carolina

By Edgar A. Vaughn, Jr., J. Samuel Griswold, Phillip L. Latham, and Alton T. Loftis

The state of South Carolina is constitutionally required to assure that total state expenditures for any year remain within the limits dictated by available revenue. Additionally, in 1980, the General Assembly enacted a statute that restricts growth in total state expenditures in any year to no more than the average growth rate in state personal income for the previous three years. That is, the state is committed to restraining expenditures to the level of revenue collections or the statutory spending limit, whichever is lower. Unlike the national government, the state has no authority to budget an operating deficit or as a matter of routine procedure to make any decisions that would render deficit spending a tool for smoothing out expenditure trends.[1] This means generally that the trend for expenditures will always follow **the trend of revenue collections or growth in personal income, whichever is lower.** If

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[1] The Reserve Fund, mentioned below, may be used to cover operating deficits when expenditures exceed revenues, but only after a two-thirds majority vote of the General Assembly authorizes such use. Since the funds used in this manner must be paid back out of subsequent year revenue collections, they function in the same way a tax anticipation note would to smooth out the spending trend, **provided revenue collections recover in the succeeding years.** The Reserve Fund historically, however, has been used only as a short-term source to deal with unexpected fiscal emergencies, not as a device to be utilized routinely in the budget cycle. Furthermore, at less than $100 million the fund would be totally inadequate to offset a series of unexpected revenue shortfalls. Thus the state has no fiscal mechanism that functions like the federal deficit spending procedure beyond the very short term.

revenue projections show declining rates of growth, plans are made to restrict spending by whatever amounts will be necessary to hold expenditures within anticipated revenue collections. By the same token, when projections point to improving rates of growth, plans are made to increase spending to accommodate the increased revenues. In the latter case, however, the presence of a statutory spending limit could mean a buildup of unbudgeted surpluses if the state economy should undergo a recovery that results in revenue generation above the spending limit.[2] Even so, plans would be made to expend funds to whichever limit is in effect at any point in time.

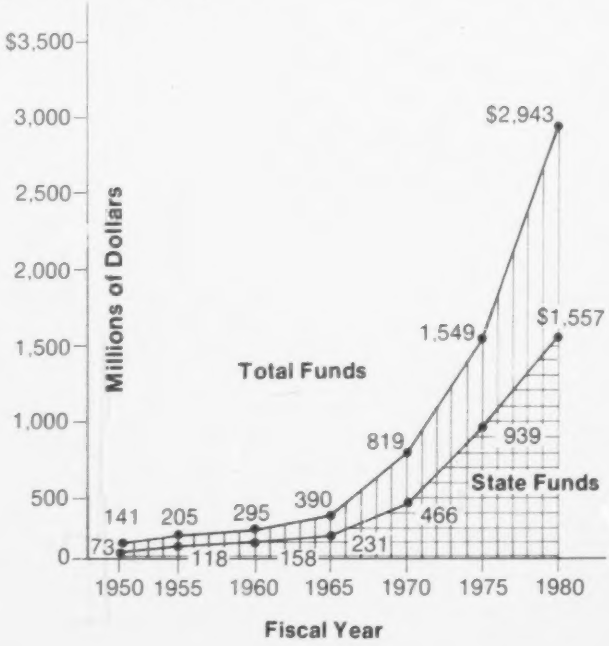
Budgeting under these rules would be relatively easy, though sometimes painful during recessionary periods, were it not for the fact that the budget must always be determined **before** we know what revenues will actually be. No matter how accurate previous revenue projections have been — and our Board of Economic Advisors has maintained a remarkably accurate track record over the last two decades — the current projection for any year is only a forecast made well in advance of the period when the revenues will be collected. In actual practice, the revenue estimate on which the budget will be based is developed 9 to 12 months before an appropriation is made, and nearly 2 years before the exact amount of revenue collections will be known.

In reality, therefore, budgeting is a guessing game, and its usefulness as an instrument of policy or a tool of expenditure control will always depend on the accuracy of the revenue estimate. Whenever collections vary 5 percent, or even 2 percent, from the estimate, and neither figure would seem impossible in the kind of economy our society has evolved, the impact is significant. Given the size of our state budget, now over $2 billion, we are talking about a variance in the $40-100 million range. Any difference of that magnitude must be properly managed if we are to be successful in accomplishing the state's priorities.

Even if budgeting is based on an educated guess, though, under our present system **all revenues collected up to the spending limit and no more** are budgeted in a fiscal year, the only exception being some authorized carry forwards of unexpended funds to the following year. When it becomes evident that revenue collections will exceed the estimate, the General Assembly may appropriate the additional funds (usually at the end of the budget cycle) in the form of a supplemental Appropriation Act. If fiscal managers have been prudent in executing their responsibilities, a plan will already be on hand by that time recommending how the extra funds should be spend. In like manner, in bad years when collections fall short, emergency steps are taken (usually somewhere near the middle of the budget cycle) to curtail expenditures enough to avoid a deficit. A short-term deficit is possible and has been provided for through a Reserve Fund that is built up annually with a portion of each year's revenue collections. If a deficit occurs, it is financed by the Reserve Fund. By law, the state is obligated to allocate enough money to repay the fund in fiscal years following the year in which a deficit is realized. Thus, except for short-term aberrations, state spending follows the revenue trend.

Beginning in the mid-1960's, it was recognized at both state and federal levels that a generally robust economy was bound to create a bonanza in revenue collections. Actually, the trend was expected to exceed the general economic trend because of the graduated income tax structure. At the federal level, the Johnson administration and Congress

CHART. Total Operating Expenditures Appropriated (millions of dollars)



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[2] In previous years, the Constitution required that all collected revenues be budgeted each year. When projections indicated bullish rates of growth, the state was able to plan and embark on expansionary programs aimed at improving or increasing state services to the general public. Under the new limit statute, such an expansionary policy might not be possible during the next phase of economic recovery. All revenues collected above the spending limit would become an unbudgeted surplus.

TABLE 1. Funding for the Education Finance Act 1979-'83 (millions of dollars)

Fiscal Year	Total Funding for EFA	Additional New Funding for EFA	Percentage Growth in EFA Funding	EFA as a Percentage of New General Fund Dollars
1978-'79*	$ 345.0			
1979-'80	401.2	$ 56.2	16.2%	32.8%
1980-'81	449.8	48.6	12.1	43.7
1981-'82	503.3	53.5	11.8	31.6
1982-'83	554.9	51.6	10.2	25.2
	$2,254.2	$209.9		

*Base monies for the EFA established from the old budget category State Teachers Aid. State Teachers Aid was funded at $282.5 million in 1977-'78; thus, the first year of implementation of the EFA required $62.5 million.

during the Nixon years evolved vast new social programs that would be funded by the additional revenues. The effect at the state level was not as dramatic, but in South Carolina we saw an increased rate of growth in revenue in the mid-1960's that was sustained through the 1970's. The following 30-year growth chart shows expenditures over the 1950-'80 period.

During the 1970's, the state evolved an ambitious program of improvements, many of which were planned to be phased in over a period of years. Education, social services, corrections, public health, local government, and general capital improvements were the major beneficiaries of the added revenues. Because the improvements were to be phased in, budget officials found themselves looking at the additional revenues each year in terms of "precommitted" funds and discretionary funds.

By 1980, a major portion of the new initiatives had been successfully phased in, but largely because of the setback of the 1974-'75 recession and the ever increasing impact of inflation, some improvements remained incomplete. The real problem of the early 1980's, though, has been a sustained decline in the revenue growth rate, coupled with an increasing demand for additional funding to offset the impact of inflation. This has resulted in a strain on revenues that first wiped out new discretionary funds, then weakened the ability of the state to fund "precommitments," and now is threatening to disrupt basic services. It is too early to know whether the new trend will persist, but already the decision makers have begun the onerous task of cutting back expenditures. While the overall budget increased in 1981-'82, a selective $40 million reduction in current services was planned at the outset of the budgeting cycle to fund certain priority items at a higher level. This was followed by a subsequent cut of about the same amount several months later when it became clear collections had not met expectations. If the problem were simply one of cutting back expenditures to fit the revenue cloth, it would mean a painful process, but we could manage it. However, it is more difficult than that, for we must balance our attack carefully in order to bring the unfinished improvements of the 1970's to an acceptable state of completion.

State agencies submit budget requests approximately one year in advance of the fiscal year in which the funds will be expended. The budget request submitted by each agency consists of three basic parts: (1) a "base" budget reflecting the current appropriated amount for each agency program; (2) prioritized requests for increases, each of which is tied directly to a specific program; and (3) prioritized proposals for reductions, each of which is also tied directly to a specific program. The agency budget requests generally use the current year's appropriation as the "base" or allocation from which discussions concerning reductions as well as additions can be systematically developed.

Agency requests for increases are identified and fall into the categories of program improvements, or expansions, and "mandates," or "precommitments." Budget precommitments may be defined as those areas of expenditures occurring during a budget cycle over which little if any decision exists concerning whether or not these items will be funded. For all practical purposes, therefore, precommitments must be funded. Budget precommitments generally result from legislative acts, policy precommitments, or built-in cost increases. (Examples of these, respectively, are the Education Finance Act, operating costs for new prisons, and Medicaid.) These items by necessity receive special consideration prior to review of agency requests for increased funds.

For illustrative purposes a more in-depth explanation of the budget impact of a legislative precommitment may be helpful. The Education Finance Act (EFA) was enacted by the General Assembly in 1977. This legislation established a program of state financial aid that equitably recognizes local financial ability. The major purpose of the EFA is to insure every child in every public school an educational opportunity that meets state standards. It was to be implemented fully over a five-year period. Major provisions included the guarantee that every child would be provided resources equivalent to at least minimum educational programs, provisions that the state would assume 70 percent of overall funding, provisions for adjusting the Base Student Cost by the current inflation rate, and requirements to reduce the pupil-teacher ratio in selected subjects and grades.

The educational effect of this legislation is yet to be determined; the budget impact, however, has been major. Table 1 shows the total dollars allocated to funding the EFA each year, as well as the new dollars added each year. Finally, the last column shows the new EFA dollars as a percentage of the new General Fund dollars available each year.

Although the Education Finance Act basically will be implemented as of FY 1982-'83, automatic inflation adjustments incorporated within the act will continue to generate additional new dollars each year. It seems reasonable to predict that inflation will persist. Given the size of the base dollars allocated to the Education Finance Act as of FY 1982-'83 ($554 million), it is readily apparent that new state resources in the $40-60 million range will be required in 1983-'84. This additional funding requirement will continue annually as long as inflation persists.

During this same period of time (1978-'83), the available new General Fund revenue increased at a lesser rate proportionately than did the Education Finance Act allotments in all but one year. The budgetary impact of such legislative precommitments is obvious. A large percentage of the new revenue generated during each fiscal year is precommitted to certain programs, thus curtailing and restricting the ability to address problems in other areas.

Table 2 shows the growth in General Fund revenue and budget precommitments for a five-year period. Budget precommitments consumed a vast share of the total new General Fund revenue available each year, ranging from a low of 36 percent to a high of 66 percent.

From the preceding discussion it is apparent that budgeting practices of the past may prove to be inadequate for handling the present dilemma facing South Carolina and most other states. The combination of high inflation and high interest rates, followed by the recent unanticipated recession, has had a strong negative impact on the state's ability to maintain services to the public. These factors have meant that the state has suffered the unfortunate combination of rapidly increasing costs and declining rates of revenue increase. With the exception of pay increases and fringe benefit adjustments for state employees, and even these have not been funded at levels sufficient to offset inflation, hardly any expenditure increases have been allowed that accommodate the impact of inflation on state services in recent years. Additionally, in FY 1981-'82, the state found it necessary to reduce personal service expenditures by approximately 7 percent, resulting in the elimination of more than 2,000 positions in the total system. The recession has meant that even this measure, however, will be inadequate to keep the state budget balanced. In November 1981, the Board of Economic Advisors revised its revenue estimate downward by approximately $40 million, making it necessary for the Budget and Control Board to recommend a further across-the-board reduction of 2.19 percent statewide.

TABLE 2. General Fund Revenue Growth/Budget Precommitments as Recommended 1979-'83 (millions of dollars)

Fiscal Year	New General Fund Dollars	Total General Fund Revenue	Percentage Growth	Budget Precommitments	Precommitments as Percentage of New General Fund Dollars
1978-'79	$209	$1,427	17.1%	76.3	36.5%
1979-'80	171	1,598	11.9	68.3	39.9
1980-'81	111	1,709	6.9	73.3	66.0
1981-'82 (est.)	169	1,878	9.8	105.6	62.4
1982-'83 (est.)	204	2,082	10.8	82.2	40.2

Revenue from federal sources is also strained and declining. Although we may continue to see increasing federal budget deficits as a result of the current recession, the Reagan administration has succeeded in initiating a major program of federal budget reductions. The main burden of these reductions is being carried by state government, and if the administration succeeds in its future efforts, federal funds to state governments will be reduced by more than 30 percent by 1984. During the two federal fiscal years October 1, 1980-September 30, 1981, and October 1, 1981-September 30, 1982, South Carolina expects to lose a total of more than $124 million in federal funds, or about 5 percent of total funds from federal sources for the two-year period. This trend is expected to worsen in later years.

The combined effect of the current recession and federal budget reductions means that revenues will be severely strained in the foreseeable future. It remains to be seen what impact the current recession will have on revenues for FY 1982-'83, but the likelihood of a reduction in the current revenue estimate must be regarded as a possibility.

The state, therefore, faces a more urgent need for prudent management of available resources which almost necessarily will involve reduction in, or elimination of, some programs and services. A clear determination of state priorities, one that recognizes that we can neither maintain the current level for all services nor cut all services proportionately, must be made our number one concern if we are to provide realistic and effective management of the state's resources. Reasonable control of expenditures in every area of government must also be a paramount concern in the coming years. Budgetary reform may provide a means of survival.

South Carolina General Fund Revenues: A Brief Discussion

By Eugene A. Laurent and Harry W. Miley, Jr.

South Carolina state government revenues are derived from a number of sources collected by a variety of state agencies. The South Carolina Tax Commission is the main collecting agent in state government, garnering over 90.4 percent of all revenues. The remaining 9.6 percent is spread among many agencies.

The General Fund is the state's primary revenue fund. It represents a composite of revenue sources derived from taxation, licenses, fees, and all institutional and departmental revenues or collections, including income from the sale of commodities and services or other activities that provide funds for the fiscal operation of state government.

The various revenues making up the General Fund are categorized into two major groups for accounting purposes. The **Regular Sources** group includes over 97 percent of General Fund revenues. This group is comprised of those revenues that are established bases of income from year to year. They are the Sales and Use Tax, the Income Taxes (Individual and Corporation), and an All Other

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group encompassing a number of relatively small revenue sources.

The other major group is the **Miscellaneous Sources** group and consists of revenues that are not as predictable as collections from Regular Sources. Generally, this classification incorporates, among others, Indirect Cost Recoveries, Debt Service Transfers, receipts that do not always recur in succeeding years, and first-year collections of newly enacted taxes. This revenue group comprises approximately 2 percent of state revenues.

HISTORICAL PERSPECTIVE: 1960-'81

As seen in Table 1, total General Fund revenues grew considerably faster in the 1970's than the 1960's: 12.8 percent versus 9.6 percent a year. The major reason for this faster growth in the 1970's is that the growth rate of South Carolina personal income was much higher in the 1970's than in the 1960's, and the majority of revenues were directly related to personal income. South Carolina personal income increased at an annual average rate of 11.2 percent between 1969 and 1980, whereas personal income averaged growth of only 8.4 percent a year in the 1960's.

While all revenue categories grew at a faster rate in the 1970's than in the 1960's, the rates of growth of the individual revenue categories were not uniform. Although total General Fund revenues increased at an average annual rate of 12.8 percent in the 1970's, only one revenue category, Individual Income Tax Collections, increased at an average rate of more than 12.8 percent. In fact, if the Individual Income Tax is excluded, the average rate of increase for the other revenue sources was only 11.0 percent.

Sol Blatt Building, Columbia. (Photo courtesy of S.C. Department of Parks, Recreation, and Tourism.)

Perhaps more notable than the differing rates themselves is the impact the rates had on the

TABLE 1. Total General Fund Revenues Annual Average Growth Rates, Fiscal Years 1960-'81

Category	FY 1959-'60 to FY 1969-'70	FY 1969-'70 to FY 1975-'76	FY 1975-'76 to FY 1980-'81	FY 1969-'70 to FY 1980-'81
Total General Fund Revenues	9.6%	12.3%	12.1%	12.8%
Less Individual Income	9.1	12.2	9.6	11.0
Regular Sources	9.6	12.3	12.7	12.5
Retail Sales Tax	11.0	11.6	10.6	11.2
Individual Income Tax	11.7	17.0	18.5	17.7
Corporate Income Tax	8.5	11.3	13.8	12.4
All Other	6.9	9.5	8.5	9.0
Miscellaneous Sources	NA	NA	12.9	NA
Revenue Sharing	NA	NA	(12.0)	NA

Source: S.C. Division of Research and Statistical Services, December 1981.

NA: Not applicable.

(): Minus.

TABLE 2. General Fund Revenues by Major Categories for Selected Periods (percentage distribution)

Category	FY 1959-'60	FY 1969-'70	FY 1975-'76	FY 1980-'81
Total General Fund Revenues	100.0%	100.0%	100.0%	100.0%
Regular Sources	100.0	100.0	94.7	97.5
Retail Sales Tax	37.0	42.2	38.6	36.0
Individual Income Tax	17.3	20.9	25.3	33.4
Corporate Income Tax	10.0	9.0	8.1	8.7
All Other	35.8	28.0	22.8	19.3
Miscellaneous Sources	NA	NA	2.0	2.1
Revenue Sharing	NA	NA	3.3	0.4

Source: S.C. Division of Research and Statistical Services, December 1981.
NA: Not applicable.

composition of total General Fund revenues. As seen in Table 2, the percentage of total General Fund revenues the major categories represent changed substantially between fiscal year 1969-'70 and fiscal year 1980-'81. Whereas the Retail Sales Tax and Corporate Tax collections as percentages of the total remained relatively constant, dropping from 37.0 percent to 36.0 percent and 10.0 percent to 8.7 percent, respectively, from 1960 to 1981, several other categories shifted considerably with respect to their percentage of the total. Individual Income Taxes now represent over one-third of all General Fund revenues, but in 1959-'60, they were only 17.3 percent of the total. In contrast, the All Other tax category declined in relative importance from 35.8 percent in 1959-'60 to 19.3 percent 1980-'81.

THE FUTURE FOR STATE REVENUES

As in the past, movements and levels of revenues in South Carolina will be determined primarily by the magnitude of economic activity in the state. However, there are other factors that will influence the relationships between the rate of growth in revenues and the level of economic activity in South Carolina. A way of viewing these relationships and changes in the relationships is through the elasticities of the various revenues to personal income.

An elasticity is an index of responsiveness of tax revenues to changes in personal income. For example, the elasticity of Sales Tax collections with respect to personal income for fiscal year 1980-'81 would be the growth in Retail Sales Tax

TABLE 3. Income Elasticity of General Fund Revenues for Selected Periods

Category	FY 1959-'60 to FY 1969-'70	FY 1969-'70 to FY 1975-'76	FY 1975-'76 to FY 1980-'81	FY 1978-'79 to FY 1980-'81
Total General Fund Revenues	1.210	1.303	1.048	0.764
Regular Sources	1.210	1.172	1.117	0.853
Retail Sales Tax	1.494	1.092	.890	0.664
Individual Income Tax	1.635	1.826	1.816	1.432
Corporate Income Tax	1.020	1.054	1.237	0.371
All Other	.768	.841	.684	0.583
Miscellaneous Sources	NA	NA	NA	NA
Revenue Sharing	NA	NA	NA	NA

Source: S.C. Division of Research and Statistical Services, December 1981.
NA: Not applicable.

$$\text{Elasticity} = \frac{\text{Percentage Change in Fiscal Year Revenue Category}}{\text{Percentage Change in Calendar Year South Carolina Personal Income}}$$

collections in 1980-'81 (6.9 percent) divided by that year's growth in personal income (11.9 percent) — or 6.9 percent ÷ 11.9 percent = 0.580. If the elasticity is less than 1, as it was in 1979, then for every 1.0 percent increase in income, Sales Tax collections would increase by less than 1.0 percent. If the elasticity is greater than 1, then for every 1.0 percent increase in income, Sales Tax collections would increase by more than 1.0 percent.

As seen in Table 3, the elasticities of total General Fund revenues by major category to personal income have changed drastically from the 1960's to the present. The elasticity of total revenues to income declined from an average of 1.210 to an average of 0.764 over the last two years. The implications of a declining elasticity are far-reaching. It means that the levels of economic growth experienced in the 1970's will result in much lower revenue growth for the state in the 1980's. For instance, a 12 percent growth in personal income in the future may generate less than 12 percent growth — perhaps only 8 percent or 9 percent growth.

While declining elasticities are evident in all the major revenue categories, the elasticity of the Retail Sales Tax shows the most change. During the 1960's, the average elasticity of Sales Tax collections to personal income was 1.011, which meant that with a 10.0 percent increase in personal income, there would be about a 10.1 percent increase in Sales Tax collections. However, by the 1978-'79 to 1980-'81 period, the elasticity had declined to 0.664, meaning that for a 10.0 percent increase in personal income, Retail Sales Tax collections would increase only 6.6 percent.

As shown in Table 3, the average elasticities of Individual and Corporate Income Tax collections

Edgar A. Brown Building, Columbia. (Photo courtesy of S.C. Department of Parks, Recreation, and Tourism.)

TABLE 4. Income Elasticity of Individual Income Tax, Fiscal Years 1969-'70 - 1979-'80

Fiscal Year	Elasticity
1969-'70	1.589
1970-'71	1.912
1971-'72	1.946
1972-'73	1.491
1973-'74	0.700
1974-'75	2.156
1975-'76	1.569
1976-'77	2.018
1977-'78	1.591
1978-'79	1.510
1979-'80	1.294

Source: S. C. Division of Research and Statistical Services, December 1981.

to personal income were fairly stable during the 1960's and the 1970's, but have dropped substantially in the last two years. However, when viewed on a yearly basis, as in Table 4, considerable variation is evident. For example, yearly elasticities for the Individual Income Tax have varied from 0.700 in 1973-'74 to 2.156 in 1974-'75. As with the sales tax figures, the declining trend in elasticities since 1974-'75 is apparent.

Unfortunately, the declining elasticity of the Individual Tax collection is inherent in the nature of the tax and is expected. Since there is an upper limit on the tax rate (7.0 percent), the elasticity declines as more and more taxpayers move into upper brackets and the "progressivity" of the Income Tax is dampened. Unless tax brackets are adjusted upward to account for inflation and such other factors as increasing income from nontaxable transfer payments, this trend will continue.

The declining elasticity of General Fund revenues indicates that the relationship between the South Carolina economy and state revenue growth has been altering for several years. This changing relationship explains, in part, the relatively poor revenue performance the state has experienced recently. However, the impact in future years may be more serious, especially when recent changes in state tax laws are considered. Estimates by the South Carolina Tax Commission show revenue losses of roughly $31 million for fiscal year 1982-'83, resulting from tax law changes made since 1979. Of importance is the fact that the major losses will involve the Sales and Individual Income Tax revenue sources. For example, the indexation of exemptions and tax brackets will reduce the growth rate of the income tax by about 2 percentage points in fiscal year 1982-'83. The phase-out of Sales Tax on utilities for residential purposes will reduce Sales Tax growth by roughly 0.8 percent. This only exacerbates the declining elasticity of these taxes.

SUMMARY

In summary, it may be some time before the state again enjoys the average revenue growth of 12-14 percent we experienced in the recent past. This is true even if personal income grows at a faster than expected pace. Unfortunately, with prospects in the 1980's for slower gains in the United States economy, smaller increases in inflation, and less rapid population growth, no surge in personal income is expected for the state.

Financing Urban Needs in South Carolina During the 1980's

By Sidney F. Thomas, Jr.

INTRODUCTION

South Carolina's urban areas in many cases are literally bursting at the seams as we rapidly change from a rural to an urban state. Preliminary 1980 census data indicate that roughly two-thirds of the Palmetto State's citizens now live in urban areas — where fewer than half our population resided just a decade ago.

Financing the services needed by these urban dwellers during the 1980's is going to require some major changes in the way we think, and the special attention of everyone from the voting citizen to the men and women who take office at every level of government. It is also going to demand action by the South Carolina General Assembly. It is going to force difficult choices and a systematic determination of priorities by the elected officials of local government. And—it is going to call for the people of this state to develop an increased awareness and understanding of, and concern for, the organization of governmental units that finance and deliver the services needed in urban communities.

For purposes of this article, urban needs are defined as those services necessary for people living in densely populated areas to maintain a desirable living environment, but which are not required by, or are required to a lesser degree by, people living in sparsely settled rural areas. It must be understood that the distinction between urban and rural is a function of the density of development, and not geographic location. Contrary to popular belief, urban areas located outside the cities of the state are nonetheless urban, and not rural, in nature. People in urban areas need urban services, regardless of whether they happen to reside within the city limits.

Services required in urban areas include public water systems, as contrasted with individual wells in rural areas; public sewer systems, as contrasted with septic tanks; public garbage collection and disposal, as contrasted with individual disposals; and full-time professional fire protection, as contrasted with volunteer service or no service at all. Other differences in urban service needs include a higher level of police protection, street lights, road maintenance, storm drainage, land use controls, and standards for building construction and maintenance.

A discussion of financing urban needs must include an understanding of the institutional structure that has emerged over time to deliver the services to meet urban needs. Many citizens believe that urban services are financed and delivered by either state government, county government, or municipal government. They fail to understand that there exists more than 290 special purpose districts, 63 school districts, and numerous private water and sewer utilities that have a substantial impact on the collection and expenditure of the people's money and the character and quality of urban services received. The following is a brief explanation of the existing governmental structure.

INSTITUTIONAL STRUCTURE

In South Carolina the state government, through its various departments and agencies, provides most of the "people oriented" services in both the urban and rural areas of the state. These include health care, social welfare, mental health services, treatment for drug and alcohol abusers, and related services. For example, a county department of social services is a state agency and not a county government function. In some instances counties supplement the state agency programs with local funds.

In addition, South Carolina is somewhat unique in that the State Department of Highways and Public Transportation has responsibility for the maintenance of almost all the paved streets and roads in both the urban and rural areas. The exceptions are in the large cities and those suburban areas where urbanization is progressing so fast that the new streets and roads cannot be turned over to the Highway Department as fast as they are built by the land developers.

Outside of a few counties with special state legislation, county government as an institution to meet urban needs did not exist in South Carolina prior to the adoption of the so-called Home Rule Legislation in 1975. Counties were truly administrative subdivisions of state government. Prior to the constitutional amendments of 1972, counties were prohibited by law from collecting and spending funds to provide urban services.

Historically, the primary vehicles for delivering urban services to urban areas, excluding education, have been the state's municipalities. The only valid justification for a municipal corporation to exist is

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to provide urban services to its urban population. This neat packaging of responsibility for urban needs broke down following the end of World War II, however, when urban growth began to spill over the city limits of the state's municipalities. South Carolina's General Assembly had enacted restrictive legislation that made it very difficult for municipalities to expand their city limits to include the adjacent urban areas. This has created problems for cities willing to shoulder the responsibility for financing and providing the urban services required by these urban fringe areas.

The people in the urban fringe areas demanded urban services, but were reluctant to take the time and effort to understand that the most reasonable way to receive such services would be to become a part of the adjacent municipality. This need for urban services by the newly developing urban areas created a dilemma for the legislative delegations from the various counties.

In most counties prior to 1975, the legislative delegation didn't just have to be concerned with statewide matters, it WAS the county government. As usually happens when officials must wear too many hats, expedient rather than comprehensive solutions were devised to meet the demands of the unincorporated urban areas for urban services.

If the people asked for recreation services, the legislative delegation passed a state law creating a recreation district. The need for water resulted in a water district. As septic tanks failed, a sewer district was created. Fire protection needs resulted in fire service districts. Each of these special purpose districts was governed by a separate appointed commission with a limited authority to levy a property tax to finance the service it was created to provide. This hodgepodge of special purpose districts in the urban areas of the state is a major impediment to the systematic provision of urban services to meet the urban needs by general purpose units of local government, i.e., municipalities and counties.

Wade Hampton Building, Columbia. (Photo courtesy of S.C. Department of Parks, Recreation, and Tourism.)

A major problem in financing the urban needs of the state during the 1980's is the multiplicity of autonomous jurisdictions functioning in each urban area. For example, the Columbia Urban Area, with a population of over 300,000 people, is served by 11 municipalities, at least 10 special purpose districts, 5 school districts, and 2 counties. In addition, numerous private utility systems provide water and sewer service to parts of the urban area. This does not include the numerous separate state agencies serving the area. A similar listing of fragmented service delivery systems could be developed for all the urban areas of the state. There is no single policy making governmental unit whose jurisdiction is coterminous with the urbanized area needing urban services. From a management and fiscal perspective, such a system is obviously inefficient and expensive. However, from a political point of view, there is little or no outcry from the citizens of these urban areas for a more efficient or economical approach to meeting the needs of the urban areas.

SOURCES OF REVENUE

The sources of revenue used by the various governmental units providing services is as complicated as the service delivery mechanisms. The several state agencies delivering services to the urban areas are financed (1) by state funds appropriated by the General Assembly; (2) by federal funds returned to the state agencies through various federal agencies; and, (3) in some instances, by fees for services paid by the service recipients. In addition, the General Assembly frequently has mandated the county governments to provide office space and other contributions, usually without providing the funds to cover the cost of such mandates.

The general government services provided by counties are financed from a variety of revenue sources. These include various taxes collected by the state and rebated to both cities and counties on a formula basis, called state shared revenue. This source of revenue will account for 20-30 percent of the general fund revenue of the various county governments. Federal revenue sharing will account for 10-20 percent. (These are the taxes collected by the federal government and rebated to local governments on a formula basis.) Property tax levied on the real and personal property within a county will account for 30-40 percent of a county's general fund budget, with the remainder being collected from a variety of sources including fines and fees.

Municipal general fund budgets rely on the same sources of revenue as county general fund budgets. State shared revenues returned to municipal governments are considerably less than those returned to counties. This source of revenue will account for 5-10 percent of most municipal general fund budgets, and federal revenue sharing will account for 10-15 percent. Property tax levied by the municipal government will account for 20-50 percent; and other revenue sources, including fines, permits, fees, business licenses, and money generated by utility systems, will make up the remainder of the municipal budget.

Special purpose district budgets generally are made up of revenues received from the recipients of the service provided and property taxes levied by the district on the real and personal property within that district. Considerable assistance has been received from federal grants to help finance the capital improvements of most special purpose districts. These federal grants and loans, aimed at helping localities with such projects as expanding the water or sewer system, acquiring and developing recreational areas, and buying and operating buses, are rapidly diminishing and, in some cases, are scheduled to be eliminated.

The current redefinition of the role of the federal government in helping finance services delivered by state agencies and local governments can have a substantial impact on the level of services to be provided in the future. The state is expected to receive a reduction of approximately 20 percent in most federal programs in the next two years. The squeeze on state finances may result in the General Assembly's again freezing the funds returned to local governments as they did in fiscal year 1975. Counties and municipalities receive 10-15 percent of their funds from federal revenue sharing which may be eliminated in the next few years. Counties receive 20-30 percent of their general fund revenue from state shared taxes. Municipalities receive 5-10 percent of their revenue from this source.

If revenue returned to local governments by the federal and state government is reduced in the next few years, this will have a profound impact on the ability of cities and counties to fund the urban services needed by the state's urban areas. Such a reduction in funds would require cities and counties to reduce their budgets by 30-50 percent, or make up the lost revenue from some other source.

The primary source of revenue controlled by city and county governments is the property tax. This is the only major source of local revenue the General Assembly has seen fit to make available to cities and counties to finance the services they provide. This revenue source currently yields 20-50 percent of the funds used by cities and counties to deliver services.

The property tax as a source of additional revenue is further complicated by the fact that most counties of the state will be implementing the state-mandated property assessment equalization program in the immediate future. This equalization will result in tax increases for most residential and farm property, even if revenue from property tax is held constant by the taxing jurisdictions. The reason for this impact is that residential and farm property historically has been undervalued, while industry has been assessed at the legally prescribed rate. Another problem with the property tax is that, in an inflationary economy, the amount of the tax may have no relationship to the ability of the owner to pay the tax. Property tax is the only tax in our governmental revenue system that taxes unrealized capital gains.

INNOVATION IN THE 1980's

The problem of financing the state's urban needs is complicated further by the fact that the problem is not evenly distributed across the state. Approximately 40 percent of the total population of the state is concentrated in only eight urbanized areas. However, these eight urban areas are fragmented into many political subdivisions delivering one or more urban services.

This situation is further demonstrated by the fact that 24 percent of the state's 265 municipalities levy no property tax and an additional 21 percent levy 30 mills or less. These municipalities are primarily the small rural towns in the state where a high level of urban services is neither expected nor required. The state and federal revenues returned to these municipalities are sufficient to finance the services provided. Only 26 of the state's 265 incorporated municipalities have over 10,000 population within their corporate limits. This figure can be misleading unless one is aware that in almost every case there are as many or more people immediately adjacent to the city limits. Over 1,200,000 people live in only eight urbanized areas while only 1,135,805 people are inside the corporate limits of all the state's incorporated municipalities. While no statistics are available, it would be reasonable to estimate that well over two million of the state's residents live either within the limits of an incorporated municipality or in the built-up urban areas immediately contiguous to the incorporated municipalities.

If necessity is really the mother of invention, the necessity of finding new ways to finance local government in the 1980's may lead to a number of inventions. The General Assembly will have to come up with legislation that will permit local governments who need extra revenue to collect funds through additional sources. This can include a local option sales tax, a local option income tax, and an accommodations tax. It can also include legislation to permit local governments to finance property-benefiting improvements such as water lines, sanitary sewers, street resurfacing, or sidewalk construction, through front foot assessments to the property receiving the benefits.

In addition, the General Assembly will need to enact legislation that will make it easier for the state's municipalities and counties to eliminate existing special purpose districts and consolidate governments and services, for contiguous municipalities to consolidate, and for municipalities to expand their corporate limits to include the adjacent urban areas. The General Assembly may also want to establish more rigid standards for incorporation of additional municipalities, and establish minimum standards of urban services that must be provided by existing municipalities if they are to continue to receive state shared revenue.

The state legislature is the key to the future character and form of the local government institutions and financial resources that will be available to local governments to finance urban services in the 1980's. For about 20 years, cities and counties have bypassed their state government and looked to the federal government for financial assistance to meet the urban service needs of their citizens. The current federal administration is placing state government in the key role to set policies that will determine how such needs will be met in the future. Cities and counties will have to look to the state capital instead of to Washington for solutions to the problems of the '80's.

Local governments will have to derive innovative ways to deliver urban services. Joint programs and projects by municipalities and counties, counties and counties, and municipalities and municipalities, will be required. Contracts with other local governments for joint financing of services will have to replace the "I would rather do it myself" attitudes. There will need to be added emphasis on cost-saving joint planning and programming efforts by cities and counties within a region to meet the needs of the urban areas.

Local governments will have to take advantage of the methods to increase revenue which may be provided by the state legislature. For example, county government has had the authority to collect business license fees since 1975; however, none of the 46 counties have yet utilized this revenue resource.

Local governments could improve their cash flow and make it easier for their constituents to pay their property taxes by billing monthly instead of annually. When faced with demands for higher levels of service, beyond the basic minimum to maintain the health and safety of the community, local governments could make them available to those neighborhoods willing to pay for the additional service, i.e., the frequency of garbage and trash collections.

The citizens of the state's urban areas will have to become more concerned with, and better informed about, the many units of government that provide the urban services they require. If any significant change in the institutional structure of local government is to take place, it will have to be instigated by individuals and organizations outside the existing "establishment." Institutional change almost always takes place from outside, rather than from within, the existing structure.

SUMMARY

These are uncommon times that call for uncommon leadership. Financing urban needs in South Carolina during the 1980's will require communication, coordination, and cooperation between state and local government and between individual units of local government through such mechanisms as the regional planning councils. Petty jealousies, provincialism, and parochialism must give way to cooperation. Rhetoric must be replaced with reason.

With strong leadership at all levels, the state's urban needs can be determined and mechanisms established to meet those needs. New state enabling legislation in the areas of institutional organization of local government, and legislation to provide the freedom for local governments to raise the necessary revenue to finance these services, will be essential.

The Management Bookshelf

By Dwight Gardner, Business Librarian, M.B.A., M.S.L.S.

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TRADEMARKS: A GUIDE TO THE SELECTION, ADMINISTRATION, AND PROTECTION OF TRADEMARKS IN MODERN BUSINESS PRACTICE

by John Oathout
Charles Scribner's Sons
597 Fifth Ave.
New York, NY 10017
1981, 210 pp., $19.95

The author, a former trademarks administrator for Exxon, explains how to develop and manage a trademark. He discusses the value of a trademark as a business asset and the basic laws governing its use. He also covers the proper methodology for establishing ownership of the trademark, and the ways to control and protect it.

TOMORROW'S OFFICE TODAY: MANAGING TECHNOLOGICAL CHANGE

by D. Birchall and U. Hammond
Halstead Press
Division of John Wiley & Sons
605 Third Ave.
New York, NY 10016
1981, 216 pp., $29.95

These authors examine the new developments in office technology and the problems associated with them. They stress the need for careful planning, and provide detailed strategies for successful implementation. They also explore the effects of such changes on office personnel.

ANTITRUST GUIDELINES FOR THE BUSINESS EXECUTIVE

by Richard Calkins
Dow Jones-Irwin
1981, 328 pp., $19.95

This volume is a nontechnical guide to antitrust laws for the layman. It covers the how and why of government antimonopoly regulations, including the laws themselves and current compliance requirements. It cannot substitute for the services of a lawyer, but it can alert the reader to the antitrust implications of his business decisions.

INVISIBLE BANKERS

by Andrew Tobias
Linden
Division of Simon & Schuster, Inc.
630 Fifth Ave.
New York, NY 10020
1981, 336 pp., $15.50

The purpose of this book is to inform the public about the operations of the huge insurance industry. Tobias takes a critical view, charging the industry with an inefficiency caused by an excess of paper work, superfluous staff, and overpriced products.

NINETY SECONDS TO TELL IT ALL: BIG BUSINESS AND THE MASS MEDIA

by A. Kent MacDougall
Dow Jones-Irwin
1818 Ridge Rd.
Homewood, IL 60430
1981, 154 pp., $14.95

This book is an in-depth report on the conflict between big business and the mass media over the fairness of the coverage given business on television and in the press. It concludes that there is room for improvement on both sides, and offers practical suggestions for improving the public communications system.

SUCCESS AND SURVIVAL IN THE FAMILY-OWNED BUSINESS

by Pat Alcorn
McGraw-Hill Book Co.
1221 Ave. of the Americas
New York, NY 10020
1981, 242 pp., $17.95

Alcorn focuses on the management and maintenance of the family-owned business, addressing many of the unique problems encountered in this type of operation. He covers such topics as employment of family members, succession of the family boss, and continuation of the business by later generations. The final chapter contains a quiz to determine an individual's potential for success in a family-owned business.

* * *

Readers are invited to submit titles of books that they wish to call to the attention of others.

STATISTICAL INDICATORS OF SOUTH CAROLINA BUSINESS

ITEMS	January 1982	January 1981	Latest Month Percentage Change from Year Ago
Total Bank Deposits ($ millions)[f]	$ 6,537.2	$ 5,760.6	+ 13.5
Demand	3,028.5	2,755.0	+ 9.9
Time	3,508.7	3,005.6	+ 16.7
Total Bank Loans ($ millions)	NA	NA	—
Savings in Savings and Loan Associations ($ millions)[b]	5,782.7	5,559.1	+ 4.0
Sales and Use Tax Collections ($ thousands)	68,735.9	67,987.7	+ 1.1
Labor Market:			
Civilian Labor Force (thousands)	1,405.8	1,304.6	+ 7.8
Employment	1,245.3	1,200.3	+ 3.7
Rate of Unemployment (percentage)[c]	11.4	8.0	+ 42.5
Nonfarm Wage and Salary Employment (in thousands)[c]	1,171.5	1,180.0	− 0.7
Manufacturing[c]	376.3	387.4	− 2.9
Contract Construction[c]	64.4	69.2	− 6.9
Transportation and Public Utilities[c]	53.9	53.6	+ 0.6
Wholesale and Retail Trade[c]	228.8	222.7	+ 2.7
Finance, Insurance, and Real Estate[c]	49.5	47.2	+ 4.9
Services, Mining, and Miscellaneous[c]	164.4	160.7	+ 2.3
Government[c]	234.2	239.2	− 2.1
Average Hourly Earnings, All Manufacturing (in dollars)	$ 6.57	$ 5.92	+ 11.0
Initial Unemployment Claims Filed in South Carolina	125,569	79,611	+ 57.7
Placements by South Carolina Employment Offices (nonagricultural)	3,410	4,378	− 22.1
Indexes of Prices Received by Farmers (1977=100)			
All Farm Products	122	128	− 4.7
All Crops	149	159	− 6.3
Livestock and Products	87	90	− 3.3
S.C. Parity Ratio	79	87	− 9.2
New Motor Vehicle Registrations			
Cars	5,995	8,468	− 29.2
Trucks	1,888	1,972	− 4.3

	January 1982	January 1981	First Month 1982	First Month 1981	First Month Percentage Change
Valuation of Building Permits Issued ($ millions)[d]					
Total for all S.C. Counties	$171.6	$115.7	$171.6	$115.7	+ 48.3
Available County Data					
Aiken	1.0	2.4	1.0	2.4	− 58.3
Berkeley	1.9	4.4	1.9	4.4	− 56.8
Charleston	47.9	15.0	47.9	15.0	+219.3
Dorchester	1.3	1.1	1.3	1.1	+ 18.2
Lexington	5.9	2.3	5.9	2.3	+156.5
Richland	15.6	11.1	15.6	11.1	+ 40.5
Greenville	18.9	7.9	18.9	7.9	+139.2
Pickens	.6	2.3	.6	2.3	− 73.9
Spartanburg	3.0	9.3	3.0	9.3	− 67.7

[a] Less than one-half of 1 percent.

[b] Due to the termination of certain data series by the Federal Reserve Bank of Richmond, this series has been replaced by the Federal Home Loan Bank of Atlanta.

[c] Ibid., the South Carolina Employment Security Commission.

[d] These amounts are now being reported in millions of dollars instead of thousands of dollars.

[e] Not available.

[f] Institutions with total deposits of $15 million or more as of 12/31/'79 and including ATS accounts, telephone and preautorized transfer accounts, and NOW accounts/share drafts.

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